सत्यमेव जयते

ANNUAL ENVIRONMENT SURVEY REPORT

2024-2025

GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE TECHNOLOGY & ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE
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Anna Nagar, Puducherry – 605 005.

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OUR VISION

1. Creating scientific and environment awareness among the society and students
2. Enabling knowledge generation by promoting basic scientific research
3. Environmental Protection and Conservation of Nature
4. Fostering Clean and Green Puducherry
5. Promoting sustainable Development Principles
6. Ensuring Circular Economy
7. Single Use Plastic Free Puducherry.

மணிநீரும் மண்ணும் மலையும் அணிநிழற்
காடும் உடைய தரண்.

-திருவள்ளுவர்

K. Kailashnathan
Hon'ble Lieutenant Governor,
Government of Puducherry.

MESSAGE

As we mark World Environment Day 2025, the call to "End Plastic Pollution Globally" resounds with urgency and with hope. This is a time not only for concern but for courageous, coordinated action.

Plastic, a material once celebrated for its utility, has today become a symbol of unchecked consumption. It invades our oceans, our soils, even the air we breathe. But the story does not end in despair. Around the world and here in Puducherry, a quiet revolution is taking shape of awareness, innovation, and resolve.

The Union Territory of Puducherry, with its coastal charm and ecological richness, must stand at the forefront of this transformation. From a farmer in Karaikal to the student in Mahe, from market vendors in Puducherry to a fisherman in Yanam - every citizen has a role in rewriting the future.

This Annual Environment Survey Report is more than a compilation of facts; it is a testament to Puducherry's evolving environmental conscience. It captures not only the state of our ecosystems but also the strength of our intent. The work being done by the Department of Science, Technology and Environment deserves recognition and reinforcement.

May this be a lasting shift where we begin to value long-term responsibility with mindful choices and commitment. Let us work together for a cleaner, healthier Puducherry where plastic no longer pollutes our land and seas, and future generations can enjoy a safe and beautiful environment.

Date: 03.06.2025

(K. Kailashnathan)

N. Rangasamy
Chief Minister,
Government of Puducherry.

MESSAGE

The Union Territory of Puducherry is distinguished by its dynamic coastal ecosystems, diverse wildlife, and a deep-rooted tradition of living in harmony with nature. Yet, the escalating plastic pollution problem threatens to unravel this delicate balance. Beyond being a global concern, plastic waste has become a pressing local challenge, clogging waterways, harming marine species, and affecting the health and livelihoods of communities across the Union Territory.

This year's World Environment Day theme, *"Ending Plastic Pollution Globally,"* is timely and urgent. The Government of Puducherry has been actively reducing single-use plastics, improving waste management, and encouraging behavioural change across communities and institutions. Addressing plastic pollution involves not just waste control, but also shifting mindsets, adopting alternatives, and nurturing a culture of responsibility.

Through the Department of Science, Technology and Environment, the Government has consistently taken progressive action to meet environmental challenges. The Annual Environmental Survey Report 2024–25 reflects our commitment to action and accountability. It offers a data-driven overview of the U.T.'s ecological status, focusing on the sources, impacts, and mitigation strategies for Controlling evnironmental degradation caused by plastic pollution.

The report highlights major initiatives—from awareness campaigns and waste segregation to coastal clean-ups and sustainable packaging—undertaken across sectors to reduce plastic pollution. These efforts support our broader goal of protecting ecosystems, empowering communities, and building a clean, green, resilient Puducherry.

I commend the Department of Science, Technology, and Environment and the Puducherry Pollution Control Committee for their tireless and consistent efforts in preparing this comprehensive report and unwavering dedication to environmental stewardship. Let this report serve as a guide and a call to action for all stakeholders to come together in building a plastic-free, pollution-free Puducherry—one that continues to thrive as a beacon of ecological balance, health, and harmony.

Date: 31.05.2025

N. Rangasamy

Dr. Sharat Chauhan, I.A.S.
Chief Secretary,
Government of Puducherry.

MESSAGE

The World Environment Day 2025 theme "Ending Plastic Pollution Globally". aptly reminds us of our duty to protect the environment from one of the most persistent challenges of our time. When not utilized, disposed or recycled properly, plastic becomes a symbol not of convenience but of unsustainable environmental harm. Addressing the issue of plastic pollution calls for substantive changes in production, consumption. disposal, and waste management, along with the required behavioural changes across all levels of the society.

Puducherry, with its fragile coastal ecosystem and diverse communities dependent on the blue economy, is highly vulnerable to the impacts of plastic waste. The effects, from blocked drains leading to inundation and flooding, to threats to marine life and biodiversity, are significant. The Government of Puducherry has responded firmly to overcome plastic pollution by banning single-use plastics, improving solid waste management and building local-level capacity.

The Annual Environmental Survey Report (AESR) 2024-25 offers a clear picture of the environmental landscape, focusing on plastic pollution its sources, impacts, and solutions. It will serve as a planning tool for policymakers and implementing agencies. Our path to end plastic pollution must be rooted in science, sustainability, and public participation. The globally acknowledged Mission LiFE (Lifestyle for Environment) advocates easy to adopt behavioural change and mindful action at individual level, which Puducherry supports as a foundation for community driven environmental action.

I commend the Department of Science, Technology and Environment for their dedicated work in preparing this report. Their ongoing efforts continue to align the U.T.'s socio-economic development with environmental responsibility.

I am confident that this report will inspire decisive action towards ending plastic pollution and shaping a greener, more resilient Puducherry.

Date: 02.06.2025

(Dr Sharat Chauhan, I.A.S.)

Ashish Madhaorao More, I.A.S.
Commissioner -cum- Secretary
(Science, Technology and Environment),
Government of Puducherry.

MESSAGE

This World Environment Day 2025, we are called to confront one of our time's most pressing and pervasive challenges—plastic pollution. With the theme “Ending Plastic Pollution Globally”, the global community is united in recognising that the plastic crisis is not merely an environmental issue but a societal and developmental challenge threatening ecosystems, economies, and public health.

In the Union Territory of Puducherry, where our identity is deeply rooted in our coastal ecosystems, vibrant culture, and ecological heritage, the growing menace of plastic waste has far-reaching implications. From choking our waterways and contaminating our soils to endangering marine life and infiltrating our food systems, plastic pollution poses a real and urgent threat.

The Government of Puducherry is fully committed to tackling this crisis through strategic, coordinated, and community-driven efforts. The Department of Science, Technology and Environment has fostered sustainable waste management practices, promoted plastic alternatives, supported behavioural change, and enabled effective policy measures under our state and national commitments.

This Annual Environmental Survey Report 2024–25 captures the essence of our journey, highlighting our progress, the challenges that persist, and the roadmap ahead. The insights presented here reflect the collective efforts of departments, institutions, and citizens in making Puducherry a model for environmental responsibility and resilience.

Let this year's World Environment Day serve as a potent reminder: ending plastic pollution is possible, but only if we act together. Our shared duty is to protect our land, oceans, and future. I urge all stakeholders to join hands with renewed purpose and work towards a cleaner, greener, and plastic-free Puducherry

Date:03.06.2025

(Ashish Madhaorao More, I.A.S.)

Dr. Yasam Lakshmi Narayana Reddy I.A.S.
Special Secretary -cum- Director,
Department of Science,
Technology & Environment,
Government of Puducherry.

Message

Plastic pollution is one of the most urgent environmental challenges today. With the global theme of World Environment Day 2025 being "Ending Plastic Pollution Globally", we are reminded that while plastic has transformed industries with its versatility, excessive and indiscriminate use, especially of single-use plastics, has caused serious harm to ecosystems, public health, and the climate.

The Union Territory of Puducherry, with its unique coastal ecosystem, vibrant communities, and rich biodiversity, is especially vulnerable to impacts from plastic waste. Plastic debris along coastlines, blocked urban drains, and microplastics entering food and water chains highlight the urgent need for transformative action at all levels.

The Department of Science, Technology and Environment, Government of Puducherry, works with line departments, local bodies, and communities, to promote sustainable alternatives, improve waste management, and enforce plastic regulations. Systemic solutions, behavioural change, and public participation can create a cleaner, plastic-free Puducherry.

The Annual Environment Survey Report (2024-25) reflects our commitment to strengthening environmental governance, advancing scientific monitoring, and ensuring compliance with environmental norms. The report aims to inform and empower stakeholders, from citizens to decision-makers on the status and progress in tackling plastic pollution.

At the core of our efforts is the belief that environmental change begins with individual action. Inspired by the national Mission LiFE initiative, we promote sustainable lifestyles among Puducherry's citizens. The road to ending plastic pollution is long, but every small step counts.

We unite to reaffirm our pledge to a pollution-free, healthy, and sustainable Puducherry.

Date: 03.06.2025

(Dr. Yasam Lakshmi Narayana Reddy I.A.S.)

Dr. N. Ramesh
Member Secretary
Puducherry Pollution Control Committee

Foreword

The quality of the environment and the quality of life are nearly synonymous. Green and Clean Puducherry is the vision of the Puducherry Pollution Control Committee. Environmental protection shall not diminish the sustainable development of society. Similarly, developmental activity cannot be allowed to affect the environment. The PPCC strives to strike a balance between the two issues. Co-ordinated efforts among the various stakeholders have been made to protect, conserve and sustain the multi-sectoral environmental entities through formulating policy and action plans and the State of the Art monitoring mechanism to manage better water resources, air quality and coastal ecosystem conservation.

The PPCC took up the responsibility of protecting the environment in the U.T. of Puducherry through the enforcement of various legislations and notifications. Over the years, several amendments have also been made to the existing statutes to meet the requirements of the unfolding environmental issues. Our organisation is fully equipped with the technical, scientific, administrative, and legal framework to deal effectively with the multifaceted issues and take stringent action against violators.

Pursuing major effluent generating industries to shift to ZLD, adaptation of Circular economy, utilization of treated sewage and moving towards solar and cleaner fuel are few achievements of PPCC towards better environment management.

Our Government is a pioneer in imposing a ban on Single-Use Plastic (SUP). In 2009, a complete ban was imposed on the usage, manufacturing, and sales of 9 types of SUP. Puducherry is ranked first in seizing banned SUP and second in fines collected among the States and UTs.

The construction of a road using seized SUP, the declaration of industry, office buildings, and temples as SUP-free campuses, the connectivity of all the pollution potential units in the Continuous Emission Monitoring System of the PPCC portal, and the applicability of the bar code system in handling biomedical waste are the few new initiatives of PPCC.

I am confident that this Annual Environment Survey Report 2024-2025 will be an effective tool to planners, policy maker, scientist and NGOs who are working in the field of environmental conservation.

N. Ramesh

Date:03.06.2025

(Dr. N. RAMESH)

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CHAPTER-1

INTRODUCTION

The Department of Science, Technology and Environment (DSTE) is a key department that works on science and technology advancements and the conservation of the environment of Puducherry. The Department houses the following four autonomous bodies:

(I) Puducherry Pollution Control Committee (PPCC)
(ii) Puducherry Coastal Zone Management Authority (PCZMA)
(iii) State Level Environment Impact Assessment Authority (SEIAA) and
(iv) Puducherry Council for Science & Technology (PCS&T)

The Puducherry Pollution Control Committee is a statutory body that promotes environmental conservation and protection by enforcing various Acts, Rules, and Notifications. The committee's modus operandi includes monitoring and inspecting industries to ensure compliance with regulations, raising public awareness, and building capacity among stakeholders.

Puducherry Coastal Zone Management Authority implements and enforces coastal regulations and policies to ensure sustainable development along the coastline. It evaluates development projects and activities in the coastal zone, ensuring the fragile coastal ecosystem is not affected.

The State Level Environment Impact Assessment Authority is responsible for evaluating and granting environmental clearances for the development projects that have potential impacts on the environmental. Puducherry Council for Science, Technology is working in creating scientific temper among the student community.

This Annual Environment Survey Report presents a comprehensive description on the activities carried out by the Department and the autonomous bodies during the year 2024-25 and an overview on the state of the environment of the U.T. of Puducherry in terms of ambient air quality, surface and ground water quality and noise levels.

This Annual Environment Survey Report is prepared to comply with the provisions of the Section 39(2) of the Water (Prevention and Control of Pollution) Act, 1974 and Section 35(2) of the Air (Prevention and Control of Pollution) Act, 1981. This report would serves to the needs of the policymakers, academicians, research scholars, students, environmentalists and also to other Departments.

CHAPTER–2

PUDUCHERRY POLLUTION CONTROL COMMITTEE

The Central Pollution Control Board (CPCB) delegated its power and functions to the Puducherry Pollution Control Committee w.e.f. 01.04.1992 as per the provisions of Section 4 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 6 of the Air (Prevention and Control of Pollution) Act, 1981. Subsequently, the PPCC was reconstituted by the Central Pollution Control Board in 2011. In compliance with the Hon'ble National Green Tribunal order in O.A. No. 95/2018, PPCC was reconstituted again vide No. CO-99/1/2022-PCP-HO-CPCB-HO dated 14.11.2022 from 9 members to 15 members as given below:

1.	The Secretary to the Government (Science, Technology & Environment) Government of Puducherry	Chairman
2.	The Director Department of Science, Technology & Environment Government of Puducherry.	Member
3.	The Director Directorate of Industries & Commerce Government of Puducherry	Member
4.	The Director Local Administration Department Government of Puducherry	Member
5.	The Transport Commissioner Transport Department Government of Puducherry	Member
6.	The Director Health and Family Welfare Services Government of Puducherry	Member
7.	The Commissioner Oulgaret Municipality Government of Puducherry	Member
8.	The Medical Superintendent Government of Puducherry	Member
9.	The Deputy Director General of Forests (C) Ministry of Environment, Forest and Climate Change Regional Office, Chennai	Member

10.	Chairman Confederation of Indian Industry (CII) Puducherry,	Expert Member
11.	Dr. M. P. Ramanujam Consultant Sempadugai Nanneeragam Puducherry	Expert Member
12.	Dr. R. Saravanane Prof. & Director (IPR) Department of Civil Engineering Puducherry Technological University	Expert Member
13.	The Member Secretary Central Pollution Control Board Parivesh Bhawan, East Arjun Nagar Delhi.	Member
14.	The Managing Director Puducherry Industrial Promotion Development and Investment Corporation Puducherry	Member
15.	The Senior Environmental Engineer Department of Science, Technology & Environment, Government of Puducherry.	Member Secretary

PUDUCHERRY POLLUTION CONTROL COMMITTEE

ORGANIZATION CHART

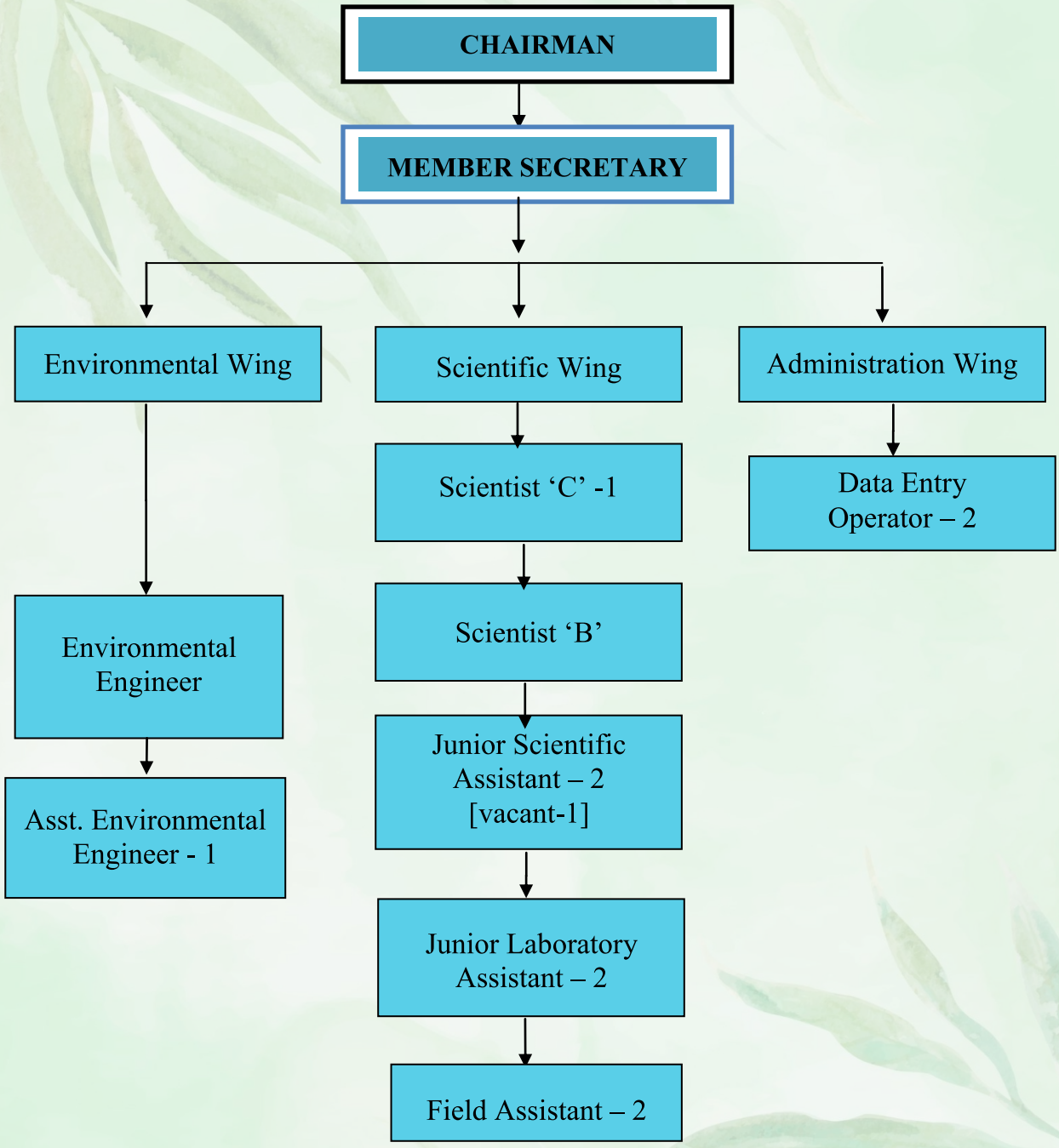


Fig.1 PPCC Organization Chart

Functions of the Puducherry Pollution Control Committee

(i) Advise the State Government in framing the environment and industrial policy.

(ii) Collect and disseminate information about natural resources, environment protection and pollution control.

(iii) Carrying out research programmes in conservation and pollution control

(iv) Collaborating with the Ministry of Environment, Forest and Climate Change and the Central Pollution Control Board (CPCB) to organise trainings related to pollution prevention and control and mass education programmes.

(v) Scrutinise applications, inspect the site, and grant/reject Consent to Establish for industrial units.

(vi) Ensure compliance with Consent to Establish conditions and issue Consent to Operate or take action against defaulters.

(vii) Keep strict vigil and monitoring on pollution control devices and industrial activity and performance.

(viii) Encourage entrepreneurs to pursue Corporate Social Responsibility (CSR) measures and adopt the Clean Development Mechanism and circular economy

(ix) Involving Self Help Groups, NGOs, Farmers and Students in creating programmes for environmental awareness.

(x) Preparation of an action plan on liquid and solid waste management.

"One Earth, One Chance."

The following Acts, Rules and Notifications are enforced by the Puducherry Pollution Control Committee.

1. The Water (Prevention and Control of Pollution) Act, 1974
2. The Water (Prevention and Control of Pollution) Rules, 1975
3. The Air (Prevention and Control of Pollution) Act, 1981
4. The Air (Prevention and Control of Pollution) Rules, 1981
5. The Environment (Protection) Act, 1986
6. Environment (Protection) Rules, 1986
7. The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989
8. The Public Liability Insurance Act, 1991
9. Fly Ash Notification, 1991
10. The Noise Pollution (Regulation and Control) Rules, 2000
11. The Ozone Depleting Substances (Regulation) Rules, 2000
12. The Batteries (Management & Handling) Rules,2022
13. Environmental Impact Assessment Notification, 2006
14. The Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016
15. The Solid Waste Management Rules, 2016
16. The Plastic Waste Management Rules, 2016
17. The Bio-Medical Waste Management Rules, 2016
18. The E-Waste Management Rules, 2016
19. The Construction and Demolition Waste Management Rules, 2016

Table 1. Details of PPCC meetings convened

No. of PPCC Meeting	Date of Convened
179th meeting	08.05.2024
180th meeting	09.12.2024

CHAPTER–3

INDUSTRY SCENARIO OF PUDUCHERRY

Table 2. Industrial units permanently registered as on 29.05.2025 in the union territory of Puducherry

Sl.No.	MAJOR PRODUCTS HEAD	LSI	MSI	SSI	MICRO	TOTAL
1	Food Products	6	21	965	112	**1104**
2	Cotton & Wool	7	10	885	314	**1216**
3	Wood Products	0	0	481	33	**514**
4	Paper & Printing	4	8	467	80	**559**
5	Leather, Rubber & Plastics	11	43	912	171	**1137**
6	Chemical & Chemical Products	24	36	1671	95	**1826**
7	Non-Metalic Mineral Products	8	5	320	40	**373**
8	Metal Products	3	22	915	74	**1014**
9	Machinery & Parts	11	42	681	61	**795**
10	Miscellaneous	0	0	254	218	**472**
11	Personal Services & Hotel Project	3	16	221	104	**344**
12	Repairing & Services	0	1	264	42	**307**
	TOTAL	**77**	**204**	**8036**	**1344**	**9661**

	LSI	MSI	SSI	MICRO	TOTAL
UNITS	77	204	8036	1344	**9661**
INVESTMENT(Rs.in Crores)	1681.19	1023.37	1069.59	227.32	**4001.47**
EMPLOYMENT(in Nos)	17926	14689	75958	8933	**117506.00**
PRODUCTION CAP. (Rs.in Crores)	4161.85	5968.30	7601.28	347.39	**18078.82**

CHAPTER-4

CONSENT MECHANISM

Based on the Guidelines of the Central Pollution Control Board (CPCB) 2025, industries have been categorised into four types based on Pollution Index Score (PIS) as given below:

Table 3. Categorisation of Industry

Category	Description	No of Units
White	Non-Polluting	33
Green	Lesser Polluting	2130
Orange	Moderately Polluting	1456
Red	Highly Polluting	133
Total		3752

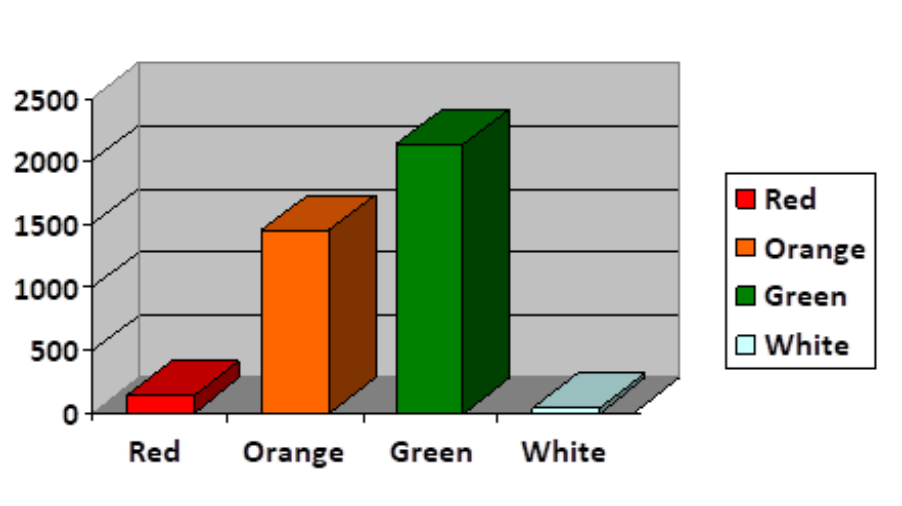


Fig.2 Category-wise Industries

a. Consent To Establish (No Objection Certificate)

PPCC introduced Online Consent Management and Monitoring System (OCMMS). Entrepreneur can apply through online for Consent to Establish and Renewal of Consent in https://ponocmms.nic.in/.PPCC considers the following aspects on the proposals for issue of Consent to Establish:

- Site suitability
- Pollution potential of the process
- Proposed pollution control measures

b.Consent to Operate (CTO)

Based on the compliance of conditions incorporated in the Consent to Establish, a Consent to Operate is issued for a five-year period.

C.Renewal of Consent

Ensuring compliance with discharge/emission standards and the implementation schedule of CTO is being renewed for the following period:

Table 4. Periodicity of Renewal

Category	Period
Green	15 years
Orange	10 years
Red	5 years

d.Delegation of power

To simplify and expedite the Consent Mechanism, the power of issue has been delegated to different levels as given below:

Table 5. Delegation of Power

<table>
<tr><th>Sl. No</th><th>Category</th><th>Size</th><th>Issue of Consent to Establish</th><th>Issue of Consent to Operate</th><th>Issue of Consent Renewal</th></tr>
<tr><td>1</td><td>Red</td><td>Small
Medium
Large</td><td>Committee</td><td>Chairman</td><td>Chairman</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Orange</td><td>Medium
Large</td><td>Chairman</td><td>Member Secretary</td><td>Member Secretary</td></tr>
<tr><td>Small</td><td colspan="3">Member Secretary</td></tr>
<tr><td>3</td><td>Green</td><td>Small
Medium
Large</td><td colspan="3">Member Secretary</td></tr>
</table>

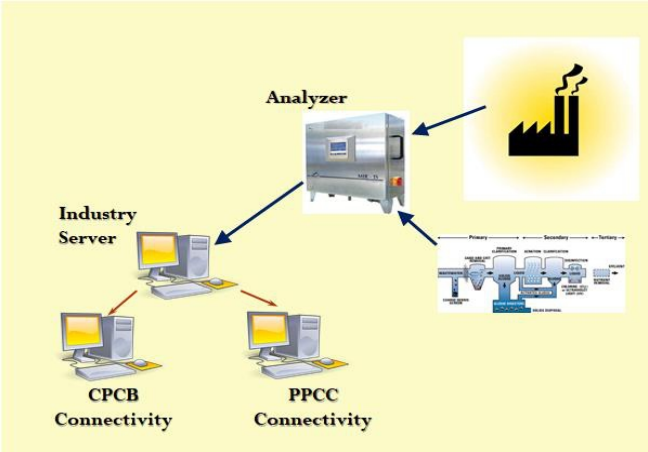
Details of Consent to Establish, Consent to Operate and Renewal of Consent issued during the year 2024-2025 are given in the Table 6.

Table 6. Details of CTE, CTO and Renewal Issued 2024 - 25

Sl. No.	Month	Issued Number(s)		
		Consent to Establish	Consent to Operate	Renewal
1.	April 2024	19	4	14
2.	May2024	4	2	3
3.	June 2024	19	1	10
4.	July 2024	14	0	2
5.	August 2024	3	1	6
6.	September 2024	6	0	4
7.	October 2024	6	1	2
8.	November 2024	11	2	6
19.	December 2024	7	4	7
10.	January 2025	4	1	10
11.	February 2025	17	3	3
12.	March 2025	5	3	6
Total		**115**	**22**	**73**

Towards IT Innovation

All the Red category units having stack emission and effluent discharge have been equipped with continuous online monitoring systems linked to the PPCC and CPCB portal. The emissions and discharges of the following 24 units have been monitored round to clock.



1. M/s. Chemfab Alkalis Ltd.
2. M/s. Strides Shasun Pharma Ltd.
3. M/s. Hindustan Unilever Ltd.
4. M/s. Sab Miller Ltd.
5. M/s. MRF Ltd.
6. M/s. Pondicherry Power Corp. td.
7. M/s. Vaigai Chlorides
8. M/s. Karaikal Chlorides
9. M/s. Karaikal Port
10. M/s. Common Bio Medical Waste Disposal Facility
11. M/s. Sumangala Steels
12. M/s. Pulkit Metals Private Limited - Eripakkam
13. M/s. Snam Alloys
14. M/s. Megna Chemicals
15. M/s. AML Steel Ltd – Puducherry
16. M/s. J B A Metal Company
17. M/s. Meenakshi Steels – Thethampakkam
18. M/s. Power Soaps Pvt. Ltd. – Sedarapet
19. M/s. Kannappan Iron & Steel Company Pvt. Ltd.
20. M/s. Nithya Packaging Private Limited
21. M/s. Devi Innoventures LLP
22. M/s. Kals Breweries Private Limited
23. M/s. Berger Paints India Limited

"From Pollution to Solution – Act Now!"

AUTHORIZATION

The Ministry of Environment, Forests and Climate Change notified the Solid Waste Management, Plastic Waste, Hazardous Waste, E-Waste, Bio-Medical Waste, and Construction and Demolition Waste Rules in 2016. Based on the provisions of these Rules, the PPCC issues online authorisations. The details of the authorisations issued are provided in Table 7.

Table 7. Details of Authorisation Issued

Sl. No.	Month	Waste Management	
		BMW	HWM
1.	April 2024	8	18
2.	May2024	0	1
3.	June 2024	5	1
4.	July 2024	5	6
5.	August 2024	4	1
6.	September 2024	8	0
7.	October 2024	1	1
8.	November 2024	7	3
19.	December 2024	8	1
10.	January 2025	11	4
11.	February 2025	7	4
12.	March 2025	0	5
		64	**45**

“Less Plastic, More Life.”

CHAPTER-6

LABORATORY

The Department of Science, Technology and Environment, with the assistance of the Puducherry Pollution Control Committee, is equipped with a laboratory located in a separate building. The Environmental Analytical Laboratory is assessed and accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL), Haryana, in accordance with the standard ISO/IEC 17025:2017 of testing.

National Accreditation Board for Testing and Calibration Laboratories

NABL

CERTIFICATE OF ACCREDITATION

ENVIRONMENTAL ANALYTICAL LABORATORY, DEPARTMENT OF SCIENCE, TECHNOLOGY & ENVIRONMENT, PUDUCHERRY POLLUTION CONTROL COMMITTEE

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

R.S.NO. 189, GARAGE BUILDING, IYYANAR KOIL STREET, MARIE OULGARET, METTUPALAYAM, PUDUCHERRY, INDIA

in the field of

TESTING

Certificate Number: TC-6480

Issue Date: 29/11/2023 Valid Until: 28/11/2025

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: Puducherry Pollution Control Committee (PPCC)

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

The laboratory performs the following activities.

I) Monitoring ambient air quality and emissions from industrial stacks

ii) Monitoring ambient air quality under the National Ambient Air Quality Monitoring Programme (NAMP)

iii) Industrial effluent monitoring

iv) Water quality monitoring under the National Water Quality Monitoring Programme (NWMP)

v) Monitoring the quality of surface and ground water.

vi) Sewage Sampling

vii) Water quality monitoring at the landfill site

viii)Monitoring of air quality and noise level on festive occasions such as diwali,bhogi and Vinayagar chathurthi

ix) Noise Monitoring

x) Environmental monitoring due to Public Complaint.

Fig. 3 Ambient Air Quality Monitoring

Fig. 4 Surface water sampling at NWMP location

Table 8. Water Quality Parameters Assessed in the Laboratory:

Sl. No.	Parameter	Test method specification
1.	Ammonia-N	APHA 23rd Edition, 4500 – NH_3 F
2.	Bio chemical Oxygen Demand (3 days @ 27°C)	IS 3025 (Part 44)
3.	Bio chemical Oxygen Demand (5 days @ 20°C)	APHA 23rd Edition, 5210-B
4.	Calcium as Ca	APHA 23rd Edition, 3500-Ca B
5.	Calcium hardness as $CaCO_3$	APHA 23rd Edition, 3500-Ca B
6.	Chemical Oxygen Demand	IS 3025 (Part 58)
7.	Chloride as Cl^-	APHA 23rd Edition, 4500-Cl^- B
8.	Chlorine Residual	IS 3025 (Part 26)
9.	Conductivity @ 25°C	APHA 23rd Edition, 2510 B
10.	Dissolved Oxygen	APHA 23rd Edition, 4500-O C
11.	Hexavalent Chromium as Cr^{6+}	APHA 23rd Edition, 3500-Cr B
12.	Magnesium as Mg	APHA 23rd Edition, 3500-Mg B
13.	Magnesium hardness as $CaCO_3$	APHA 23rd Edition, 3500-Mg B
14.	Nitrate – N	APHA 23rd Edition, 4500-NO_3^- E
15.	Nitrate –N	APHA 23rd Edition, 4500-NO_3^- B
16.	Nitrite –N	APHA 23rd Edition, 4500-NO_2^- B
17.	Oil & grease	IS 3025 (Part 39)
18.	pH Value @ 25°C	APHA 23rd Edition, 4500-H^+ B
19.	Phenolphthalein Alkalinity	APHA 23rd Edition, 2320 B
20.	Phosphate as PO_4^{3-} P	APHA 23rd Edition, 4500-P D:
21.	Potassium as K	APHA 23rd Edition, 3500 K-B
22.	Sodium as Na	APHA 23rd Edition, 3500 Na-B
23.	Sulphate as SO_4^{2-}	APHA 23rd Edition, 4500-SO_4^{2-}E
24.	Temperature	APHA 23rd Edition, 2550 B
25.	Total Alkalinity as $CaCO_3$	APHA 23rd Edition, 2320 B
26.	Total Dissolved Solids Dried at 180ºC	APHA 23rd Edition, 2540 C
27.	Total Fixed Solids Ignited at 550ºC	APHA 23rd Edition, 2540 E

28.	Total Hardness as CaCO3	APHA 23rd Edition, 2340 C
29.	Total Suspended Solids Dried at 103 - 105ºC	APHA 23rd Edition, 2540 D
30.	Turbidity	APHA 23rd Edition, 2130 B

Table 9. Ambient Air Quality parameters assessed in the Laboratory

Sl. No.	Parameter	Test method specification
1.	Nitrogen Dioxide (as NO_2)	IS 5182 (Part 6)
2.	Respirable Particulate Matter (size less than 10µm) or PM_{10}	IS 5182 (Part 23)
3.	Sulphur Dioxide (as SO_2)	IS 5182 (Part 2)
4.	Residual Chlorine	

Table 10. Source emission monitoring parameters assessed in the Laboratory

Sl. No.	Parameter		Test method specification
1.	CO		USEPA Method – 10 –Using Flue Gas Analyser
2.	CO_2		USEPA Method – 3A –Using Flue Gas Analyser
3.	Flow Rate		IS 11255 (Part 3)
4.	NO_X - Stack		IS 11255 (Part 7)
5.	NO_X		USEPA Method – 7E –Using Flue Gas Analyser
6.	O_2		USEPA Method – 3A –Using Flue Gas Analyser
7.	Particulate Matter (PM)		IS: 11255 (Part 1)
8.	SO_2 - Stack		USEPA Method – 6C –Using Flue Gas Analyser
9.	Sulphur Dioxide (SO_2)		IS: 11255 (Part 2)
10.	Temperature		IS: 11255 (Part 3)
11.	Velocity		IS: 11255 (Part 3)

Table 11. Ambient noise level monitoring parameters assessed in the Laboratory

Sl. No.	Parameter	Test method specification
1.	L_{eq} dB(A), L_{max}, L_{min}, L_n (L_{10}, L_{50}, L_{90})	IS 9989

CHAPTER–7

STATUS OF AMBIENT AIR QUALITY

The Puducherry Pollution Control Committee is conducting Ambient Air Quality Monitoring at six locations in the Union Territory of Puducherry under the 'National Air Quality Monitoring Programme (NAMP) of the Central Pollution Control Board (CPCB). The monitoring of pollutants is conducted for 24 hours (with 4-hourly sampling for gaseous pollutants and 8-hourly sampling for particulate matter) at a frequency of twice a week

Table 12. Location of NAMP Stations

Sl. No.	Location	Category	Major source of Pollution
1	Local Administration Department Building (LAD), Suffren Street, Puducherry.	Residential area	Vehicular emission and dust from road
2	Dept of Science Technology and Environment Building (DSTE), Anna Nagar, Puducherry.	Residential cum Commercial area	Vehicular emission and dust from road
3	Electricity Department, Mettupalayam Industrial Estate (PIPDIC), Puducherry.	Industrial area	Industrial Pollution and Vehicular pollution.
4	B.Ed. College, Nehru Nagar, Karaikal	Residential area	Vehicular emission and natural dust from road
5	Govt. Tourist Home, Kovilpathu, Karaikal	Residential cum Commercial area	Vehicular emission and dust from road
6	PPCL, Polagam, T.R. Pattinam, Karaikal	Industrial area	Industrial Pollution and Vehicular pollution.

Objectives of National Air Quality Monitoring Programme

i) To determine the status of ambient air quality;

ii) To ascertain compliance with prescribed ambient air quality standards.

iii) To identify non-attainment cities with respect to national standards and;

iv) To evolve policy and action plans to improve the air quality.

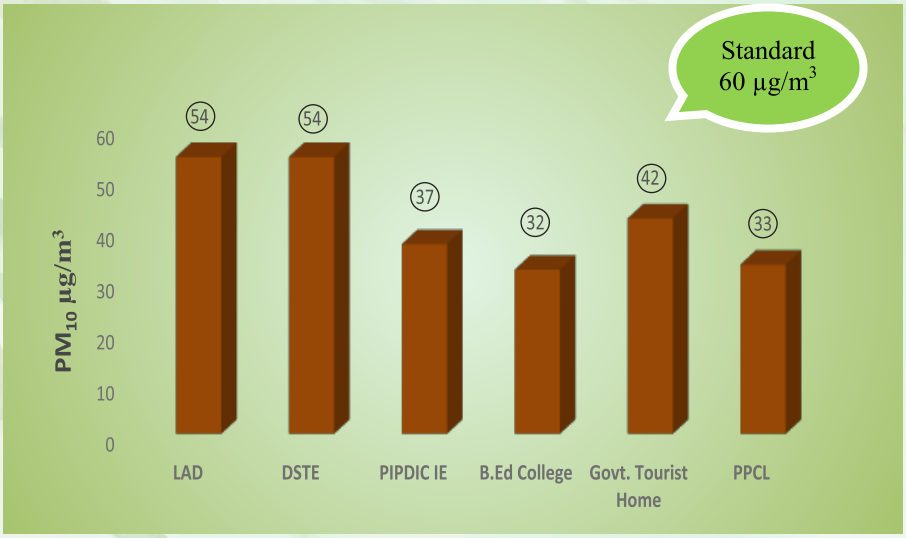


Fig: 5. Annual Average concentration of PM_{10}

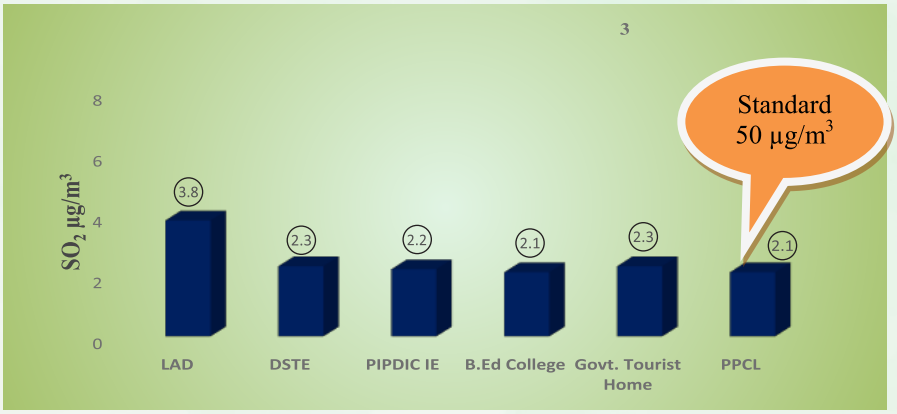


Fig: 6. Annual Average concentration of SO_2

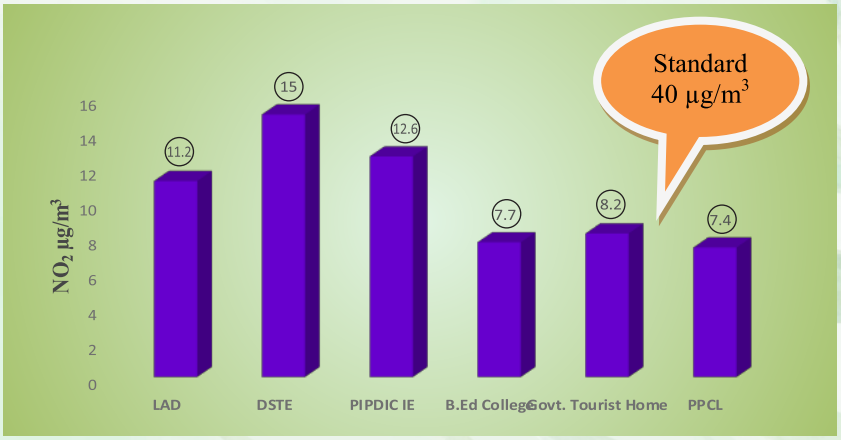


Fig: 7. Annual Average concentration of NO_2

- The monitoring results reveal that the 24-hour average concentration of Particulate Matter (PM10) measured across all six locations are within the prescribed standard limit of 100 µg/m3. However, the PM10 concentration exceeded the prescribed standard limit during the Diwali festival.
- The annual average concentration of PM10 measured at all six locations ranges from 32 to 54 (µg/m3), within the prescribed standard limit of 60 µg/m3
- The annual average concentration of the pollutants, viz., SO2 & NO2, in all six locations are within the prescribed standard limit.

Air Quality Index

The Air Quality Index is a tool for effectively communicating air quality status to people in easy-to-understand terms. It transforms complex air quality data of various pollutants into a single number (index value), nomenclature, and colour.

There are six AQI categories: Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe. Each category is decided based on ambient concentration values of air pollutants and their likely health impacts (known as health breakpoints). Health Breakpoint concentrations for each of the pollutants vary with reference to the AQI category. The sub-indices for individual pollutants are calculated using the 24-hourly measured average concentration value of a pollutant and the health breakpoint concentration range. The sub-index is a linear function of concentration of a particular pollutant (for example, the sub-index for $PM_{2.5}$ will be 51 at a concentration of 31 µg/m3, 75 at a concentration of 45 µg/m3 and 100 at a concentration of 60 µg/m^3).

Table 13. AQI and Possible Health Impacts

AQI	Possible Health impacts
Good (0-50)	Minimal Impact
Satisfactory (51 - 100)	Minor Breathing discomfort to sensitive people
Moderate (101 - 200)	Breathing discomfort to the people with lung, heart disease, children and older adults
Poor (201 -300)	Breathing discomfort to people on prolonged exposure
Very Poor (301-400)	Respiratory illness to the people on prolonged exposure
Severe (>400)	Respiratory effects even on healthy people

Table 14. AQI and pollutant breakpoint concentrations

AQI Category (Range)	PM_{10} 24 – hr µg/m^3	$PM_{2.5}$ 24 – hr µg/m^3	NO_2 24 – hr µg/m^3	O_3 8 – hr µg/m^3	CO 8 – hr mg/m3	SO_2 24 – hr µg/m^3	NH_3 24 – hr µg/m^3
Good (0-50)	0-50	0-30	0-40	0-50	0-1.0	0-40	0-200
Satisfactory (51-100)	51-100	31-60	41-80	51-100	1.1-2.0	41-80	201-400
Moderate (101-200)	101-250	61-90	81-180	101-168	2.1-10	81-380	401-800
Poor (201-300)	251-350	91-120	181-280	169-208	10.1-17	381-800	801-1200
Very Poor (301-400)	351-430	121-250	281-400	209-748*	17.1-34	801-1600	1201-1800
Severe (401-500)	430+	250+	400+	748+*	34+	1600+	1800+

AQ sub-index and health breakpoints are evolved for eight pollutants (PM_{10}, $PM_{2.5}$, NO_2, SO_2, CO, O_3, NH_3, and Pb) for which short-term (up to 24 hours) National Ambient Air Quality Standards are prescribed. The worst sub-index among the computed parameters is responsible for the index for that location. All eight pollutants may not be monitored at all the places. Overall AQI is calculated only if data are available for minimum three pollutants, out of which one should necessarily be either $PM_{2.5}$ or PM_{10}.

Table 15. Status of AQI in Puducherry and Karaikal

AQI Category	AQI Range µg/m^3	Number of AQI Values in different categories			
		Puducherry		Karaikal	
		No of AQI Values	% of AQI Values	No of AQI Values	% of AQI Values
Good	0-50	128	50.0	263	88.3
Satisfactory	51-100	126	49.2	34	11.4
Moderate	101-200	1	0.4	1	0.3
Poor	201-300	1	0.4	-	-
Total AQI Values		256	100	298	100

Note: One observation means one AQI calculated for daily ambient air quality data at one station.

In Puducherry, during the year 2024, 99.2% of days, the quality of air was good (128 days – 50.0%) and satisfactory (126 days – 49.2%) categories and 0.8% of the days was in moderate (1 day – 0.4%) and poor categories (1 day – 0.4%).

In Karaikal, during the year 2024, 99.7% of days, the quality of air was good (263 days – 88.3%) and satisfactory (34 days – 11.4%) categories and 0.3% of the days were under the moderate category (1 day – 0.3%).

Continuous Ambient Air Quality Monitoring System (CAAQMS):

Puducherry Pollution Control Committee is operating one CAAQMS in the terrace of the Town and Country Planning Department, Puducherry, with the financial assistance of the CPCB.

Under CAAQMS, Particulate Matter (PM_{10} & $PM_{2.5}$), Sulphur Dioxide (SO_2), Nitrogen Dioxide (NO_2), Ammonia (NH_3), Carbon Monoxide (CO), Ozone (O_3) and Benzene (C_6H_6) are being monitored. The CAAQMS also has sensors to measure meteorological parameters such as Wind Speed, Wind Direction, Ambient Temperature, Relative Humidity, Solar Radiation and Rainfall.

Table 16. Annual average concentration of pollutants under CAAQMS

Parameters	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO mg/m^3	NH_3 µg/m^3	Ozone µg/m^3
Annual Average	41	22	7.6	9.2	0.59	12.6	42.9
NAAQ Standard Limit (Annual)	60	40	50	40	-	100	-

Table 17. Status of Category-wise numbers of AQI in the UT of Puducherry

|AQI Category	AQI Range	Number of AQI Values in different categories		Pollutant-wise number of AQI values in the AQI category			
		No. of AQI Values	% of AQI Values	PM_{10}	$PM_{2.5}$	CO	O_3
Good	0-50	188	51.4	45	3	12	128
Satisfactory	51-100	168	45.8	34	42	13	79
Moderate	101-200	8	2.2	-	8	-	-
Poor	201-300	1	0.3	-	1	-	-
Very Poor	301-400	1	0.3	-	1	-	-
Total AQI Values		366	100	79	55	25	207
Note: One observation means one AQI calculated for daily ambient air quality data at one station.							

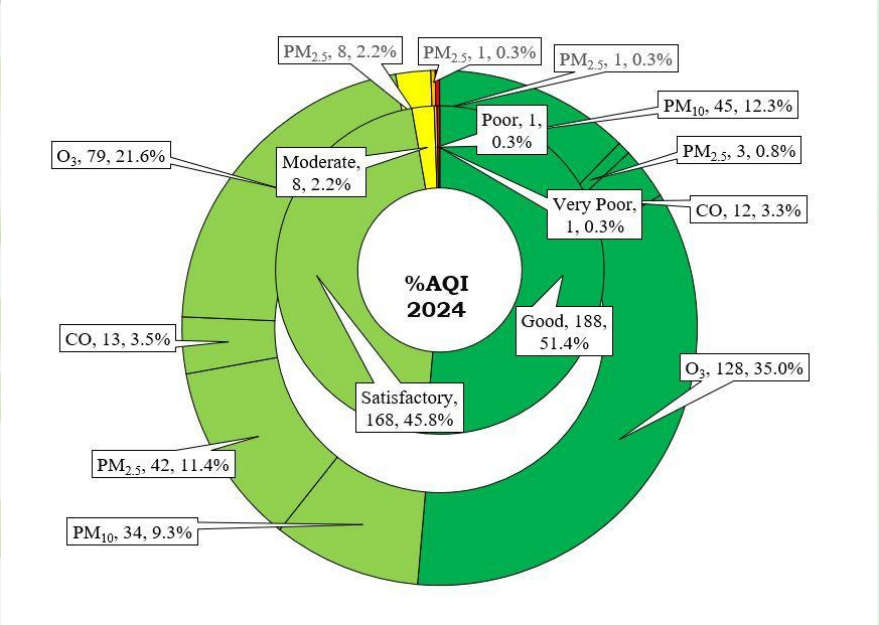


Fig. 8 Air quality Index

The air quality data indicates that 51.4% of values fall under the good category, 45.8% fall under the satisfactory category, 2.2% fall under the moderate category, 0.3% fall under the poor category, and 0.3% fall under the very poor category, respectively.

The poor category (0.3%, 1 day) and very poor category (0.3%, 1 day) were on the occasion of Boghi and Diwali, respectively, due to pollutant $PM_{2.5}$. There were 8 moderate days (2.2%) during the year 2024. $PM_{2.5}$ was the predominant pollutant for all those 8 days.

In Puducherry during the year 2024, 97.2% of days, the quality of air was good (188 days - 51.4%) and satisfactory (168 days - 45.8%) categories and 2.8% of the days it was in moderate (8 days – 2.2%), poor (1 day – 0.3%) and very poor (1 day – 0.3%) categories due to sporadic burning activity and festive occasions during Bhogi and Diwali.

Ambient Air Quality and Noise Pollution Levels – Deepavali 2024:

Puducherry Pollution Control Committee carried out Ambient Air Quality and Noise Monitoring on Pre-Deepavali day (24.10.2024) and on Deepavali day (31.10.2024) in Puducherry and Karaikal to assess the environmental impact of bursting crackers during the Deepavali festival.

Noise Level Monitoring: 06.00 P.M. to 12.00 midnight

The Ambient Noise Level was measured at two locations, Muthialpet and Mudaliarpet in Puducherry and one at Kovilpathu, Karaikal. The report reveals that on Pre-Deepavali Day, noise level ranged between 61.2 Leq dB(A) and 64.4 Leq dB(A) and while on Deepavali day, noise level ranged between 75.0 Leq dB(A) and 90.1 Leq dB(A). The measured noise level during Deepavali day 2024 decreased compared to Deepavali Day 2023 at Mudaliarpet and Muthialpet and the noise level increased at Karaikal.

The main causes of the increase in the Ambient Noise Level on Deepavali day are the bursting of crackers and vehicular movement.

Continuous Ambient Air Quality Monitoring Station

The data received from the Continuous Ambient Air Quality Monitoring Station located at Jawahar Nagar reveal that the concentration of PM10 and PM2.5 on Deepavali day 2024 was 238 µg/m3 and 207 µg/m3, respectively, and during Deepavali day 2023, the concentrations were 183 µg/m3 and 144 µg/m3, respectively.

The report's outcome reveals that the concentration of pollutants monitored on Deepavali day 2024 was found to be higher than on pre-Deepavali day 2024 in Puducherry and Karaikal. In Puducherry, the Air Quality Index (AQI) was 367 in CAAQMS and 363 in the manual monitoring station on Deepavali day 2024, which falls under the very poor category. In Karaikal, the AQI was 129 in the manual monitoring station, which falls under the moderate category.

Ambient Air Quality Monitoring: 06.00 A.M. to 06.00 A.M. (24 Hours

The Ambient Air Quality Monitoring at Puducherry was carried out at three locations: Reddiarpalayam, Mudaliarpet and Anna Nagar in Puducherry and Karaikal at Kovilpathu.

The monitoring data reveals that on comparison with Pre-Deepavali day 2024, the measured concentration of PM_{10} & $PM_{2.5}$ was found to be higher on Deepavali day 2024 in Puducherry, and also found to be higher compared to the 24-hour average concentration of National Ambient Air Quality Standards. The city-level average calculated for PM10 and PM2.5 concentrations on Deepavali day 2024 were 240 µg/m3 and 202 µg/m3, respectively, and on Deepavali day 2023, the concentration was 222 µg/m3 and 159 µg/m3, respectively.

In Karaikal on the Deepavali day 2024, the concentration of PM10 and PM2.5 was 143 µg/m3 and 54 µg/m3, respectively, and on Deepavali day 2023, the concentration of PM10 and PM2.5 was 108 µg/m3 and 85 µg/m3, respectively. In Puducherry, the concentration of Particulate Matter (PM_{10} and $PM_{2.5}$) during Deepavali day 2024 is increased on compared to Deepavali day 2023. In Karaikal, the concentration of Particulate Matter (PM_{10}) during Deepavali day 2024 is increased compared to Deepavali day 2023. The 24-hour average concentration of SO_2 and NO_2 is within the prescribed standards

In compliance with Hon'ble Supreme Court Order dated 23.10.2018, Puducherry Pollution Control Committee has conducted short term ambient air quality monitoring in Puducherry for 15 days (Commencing from 7 days before Diwali and ending 7 days after Diwali) for the parameters namely PM_{10} , $PM_{2.5}$, SO_2 , NO_2, Pb, As, Ni, Al, Ba, Fe, Sr and Sulphur. Accordingly, the monitorings were was conducted at two residential locations viz. (i) Reddiapalayam and (ii) Mudaliarpet. The analysis report reveals the following:

- The concentration of PM_{10} was found to be higher (Location I - 245 µg/m^3**:** Location II - 261 µg/m^3) and above the 24 hours average concentration of 100 µg/m^3 on Deepavali day (31.10.2024) at both locations. All the other days, the concentration was within the prescribed standard limit. The concentration of PM_{10} ranges between 22-261 µg/m^3.
- The concentration of $PM_{2.5}$ was found to be higher (Location I - 158 µg/m^3**:** Location II - 255 µg/m^3) and above the 24-hour average concentration of 60 µg/m^3 on Deepavali day (31.10.2024) at both locations. All the other days, the concentration was within the prescribed standard limit. The concentration of $PM_{2.5}$ ranges between 14-255 µg/m^3.
- The 24-hour average concentration of SO2 and NO2 at both locations was within the prescribed standards of 80 µg/m^3. The concentration of SO_2 and NO_2 ranges between 4.0 - 12.0 µg/m3 and 9.0-14.3 µg/m3, respectively.
- Lead (Pb): The concentration of Lead in PM10 and PM2.5 was found at both locations. The values ranged between 0.45 µg/m3 and 3.05 µg/m3. On Deepavali day (31.10.2024), the values were above the prescribed NAAQS limit of 1.0 µg/m3 at location I and at location II on 30.10.2024 and 31.10.2024. All the other days, the values were below the detectable limit of 1.0 µg/m^3.
- Nickel (Ni): The concentration of Nickel in PM_{10} and $PM_{2.5}$ was present at location I from 29.10.2024 to 03.11.2024 and at location II from 29.10.2024 to 03.11.2024. The values range between 1.17 and 14.26 ng/m^3. The values are within 20 ng/m^3 (NAAQS – Annual average value). All the other days, the values were below the detectable limit of 1.0 ng/m^3.
- Arsenic (As): The concentration of Arsenic in PM_{10} was present at location I from 28.10.2024 to 01.11.2024 and at location II from 29.10.2024 to 02.11.2024. In $PM_{2.5}$ from 30.10.2024 to 01.11.2024 at both locations. The values range between 2.24 and 23.02 ng/m^3. The values are above the prescribed annual average of 6 ng/m^3 (NAAQS – Annual average value) from 30.10.2024 to 01.11.2024. All the other days, the values were below the detectable limit of 1.0 ng/m^3.
- Aluminium (Al): The concentration of Aluminium in $PM_{2.5}$ was present at location I from 29.10.2024 to 02.11.2024 and at location II from 28.10.2024 to 03.11.2024. The values range between 1.08 µg/m^3 and 17.73 µg/m^3. The values are within 40 µg/m^3 of the short-term Critical Ambient Air Quality Critical Value (AAQCV).

- Barium (Ba): The concentration of Barium in $PM_{2.5}$ was present in both the locations from 29.10.2024 to 01.11.2024. The values range between 1.37 µg/m^3 and 16.52 µg/m^3. The values exceeded the prescribed standard 4.0 µg/m3 of short-term Critical Ambient Air Quality Critical Value (AAQCV) on 30.10.2024 and 31.10.2024.
- Iron (Fe): The concentration of Iron in $PM_{2.5}$ was present at both locations except on 05.11.2024 & 06.11.2024 at location (I) and on 06.11.2024 at location (II). The values ranged between 1.06 µg/m^3 and 4.71 µg/m^3. The values are within AAQCV of 40 µg/m^3.
- Strontium (Sr): The concentration of Strontium in $PM_{2.5}$ was reported as below detectable limit of 1.0µg/m^3.

CHAPTER-8
STATUS OF WATER QUALITY

Puducherry Pollution Control Committee periodically monitors water quality at various locations with financial assistance from the Central Pollution Control Board under the National Water Quality Monitoring Programme (NWMP). Monitoring is conducted monthly in surface water bodies in Puducherry and Karaikal regions, annually in Mahe and Yanam regions, and during pre- and post-monsoon in the case of groundwater.

Objectives of Water Quality Monitoring

The water quality monitoring is performed with the following main objectives:

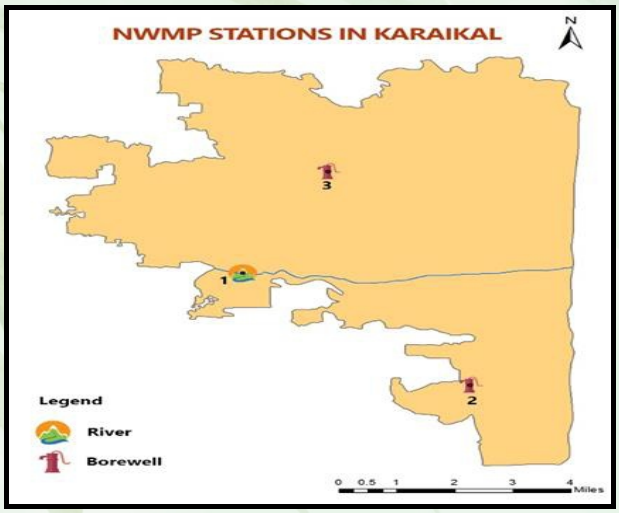
i) To assess the fitness of water for different uses.
ii) To assess the assimilative capacity of a water body.
iii) To assess water quality trends over time.
iv) To evaluate the extent to which pollution control measures are required.

Water Quality Monitoring Stations in the Union Territory of Puducherry

The water quality of the U.T. of Puducherry is monitored in 34 stations under NWMP. The details of water body-wise and frequency-wise no. of monitoring stations are shown in the figure below:

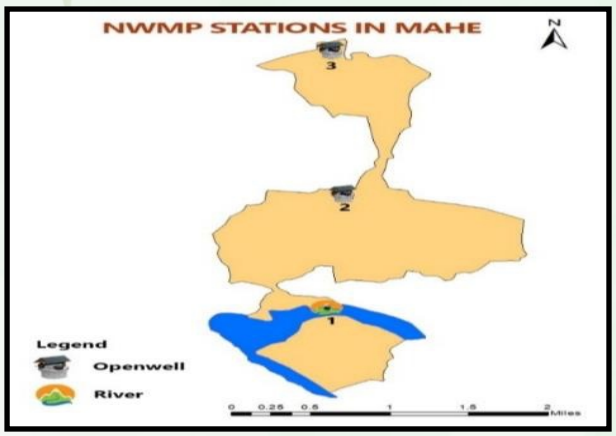
Table 18. NWMP Locations in Puducherry

Sl. No.	Location	Sl. No.	Location
1	Ousteri Lake	14	Maruthi School
2	Kanagan Lake	15	Echankadu
3	Bahour Lake	16	Nearby Lake, Bahour
4	Chunnambar River	17	Chevalier Sellane Government Higher secondary school, Kalapet
5	ChettyKoil, Mission Street	18	DhanderarKulam, Sedarapet
6	Krishna Nagar	19	Kothapurinatham,Thiruvandarkoil
7	Thengaithittu	20	Thirukkanur
8	Muthirappalayam	21	Madukarai
9	Pondicherry University	22	Panithittu
10	Katterikuppam	23	Kuruchikuppam Beach
11	Kurumbapet	24	Kalapet kuppam Beach
12	Mettupalayam	25	Thengaithittu Beach
13	Uruvaiyar		



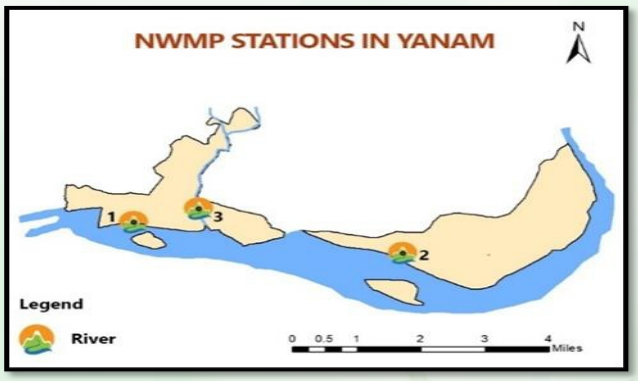
1. Arasalar
2. T.R. Pattinam
3. Vadamattam

Fig:9. NWMP Stations in Karaikal



1. Mahe River
2. Pallur
3. Pandakkal

Fig: 10. NWMP Stations in Mahe



1. Gowtami - Godavari River Near Balayogi Bridge
2. Gowtami - Godavari River Near Adavipolam
3. Coringa River (Tidal Lock)

Fig: 11. NWMP Stations in Yanam

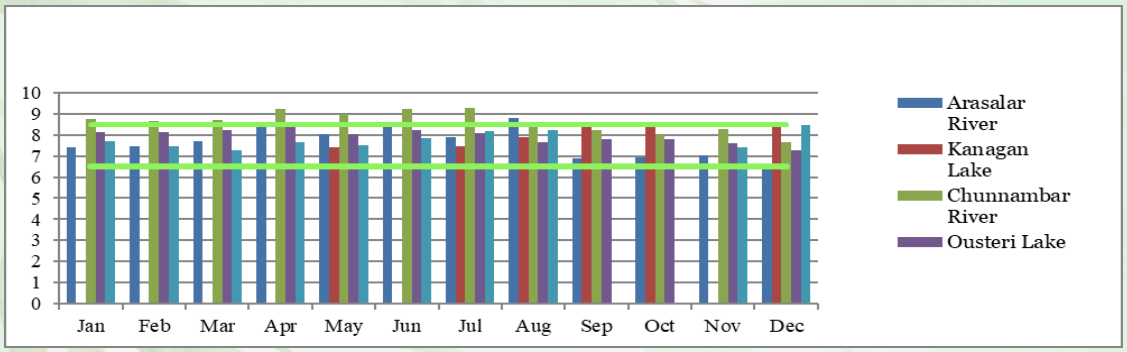


Fig.12 pH

Note: As per the primary water quality criteria for bathing water class B, pH should be between 6.5 and 8.5.

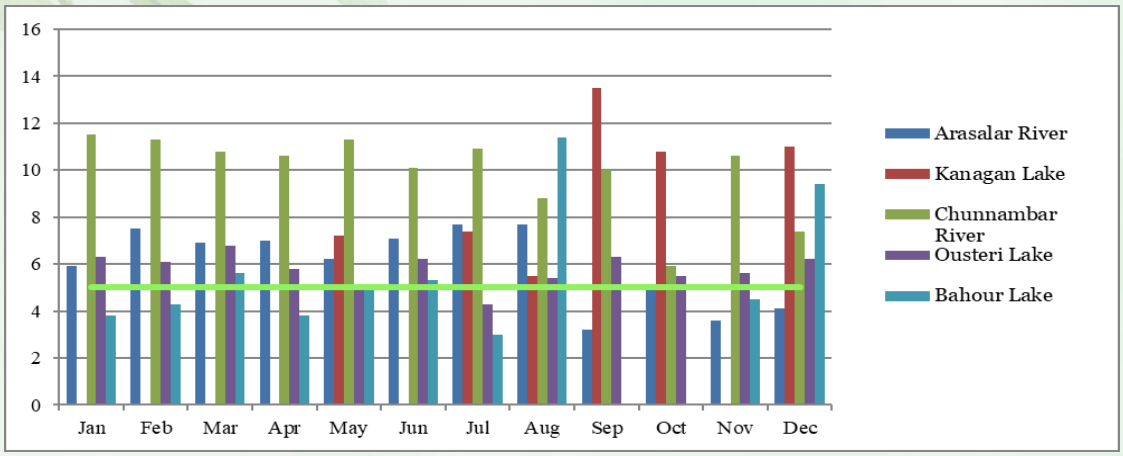


Fig.13 DO, mg/l

Note: As per the primary water quality criteria for bathing water class B, DO should be 5 mg/l or more.

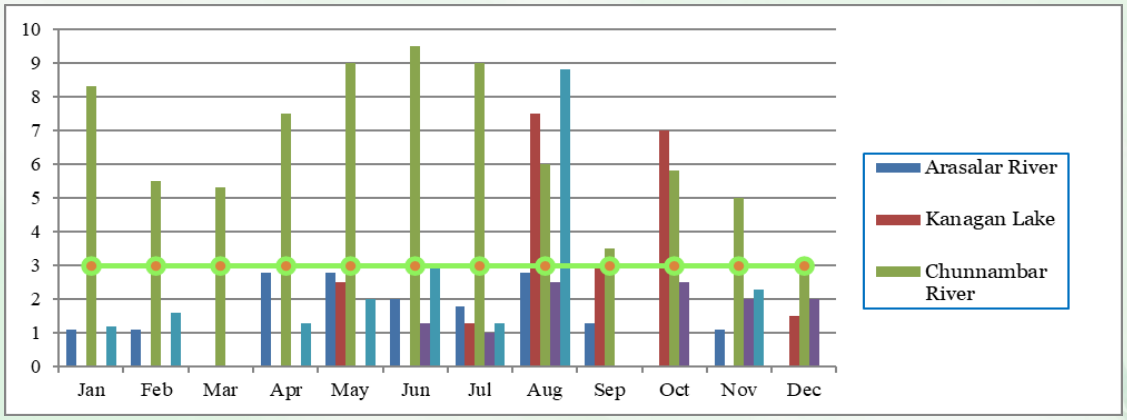


Fig.14 BOD, mg/l

Note: According to the primary water quality criteria for bathing water of class B, the BOD should be 3 mg/l or less.

Alkaline pH in Chunnambar River, Low DO in Bahour Lake and Arasalar River and high BOD in Chunnambar River and Kanaganeri Lake may be due to excessive algae growth/aquatic plants and are often indicators of organic pollution load.

Status of Surface Water Quality (2024) – Mahe and Yanam

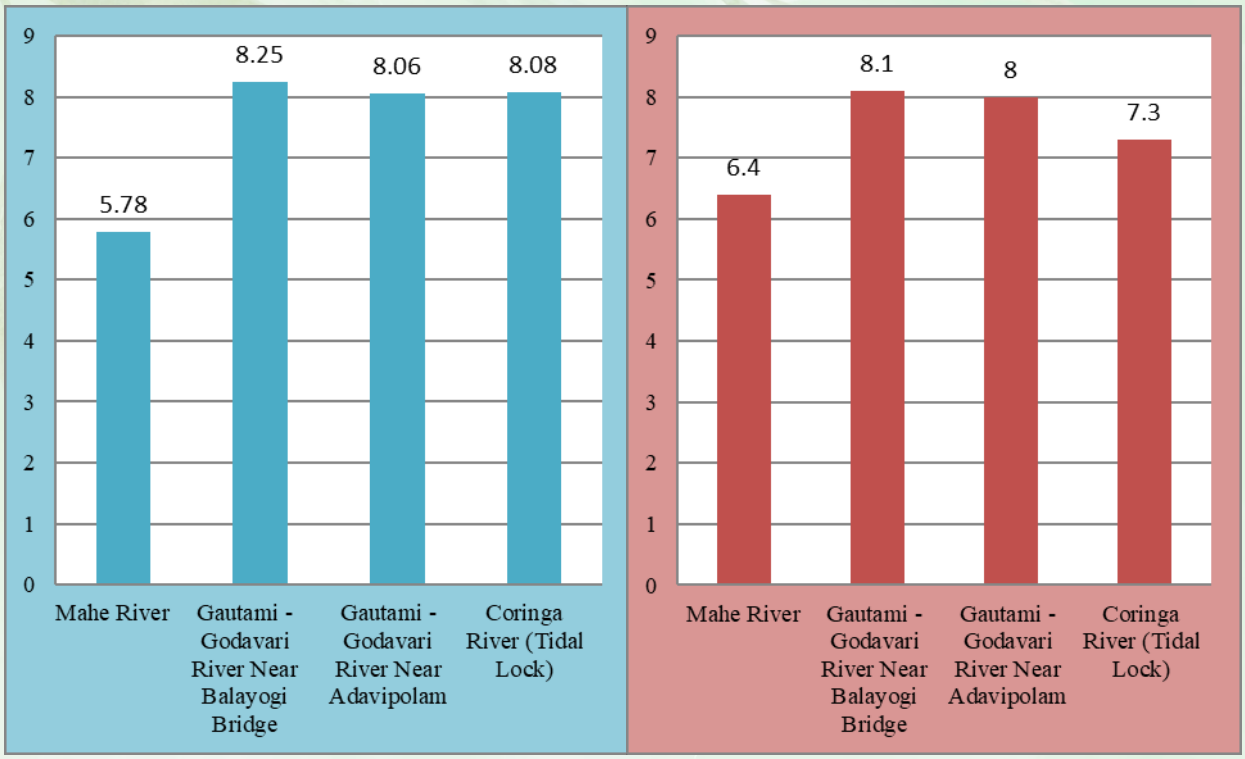


Fig.15 pH

Fig.16 DO, mg/l

In the Mahe and Yanam regions, all the parameters meet the primary water quality criteria for bathing water—Class of Water B—except for the pH value (5.78) in the Mahe River, which does not meet the standard limit.

The river's slightly acidic pH may be due to a combination of natural and human-influenced factors, such as rainwater, soil and rock composition, and agricultural runoff.

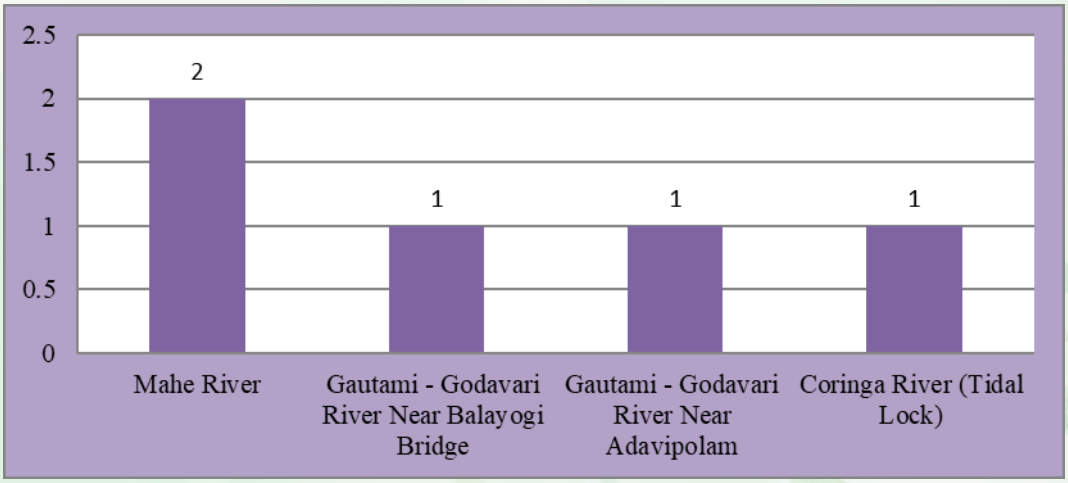


Fig.17 BOD, mg/l

In Mahe and Yanam region, Dissolved Oxygen and Biological Oxygen Demand is meeting the standard limit as per the primary water quality criteria for bathing water – Class of Water B 5mg/l more & 3mg/l or less respectively.

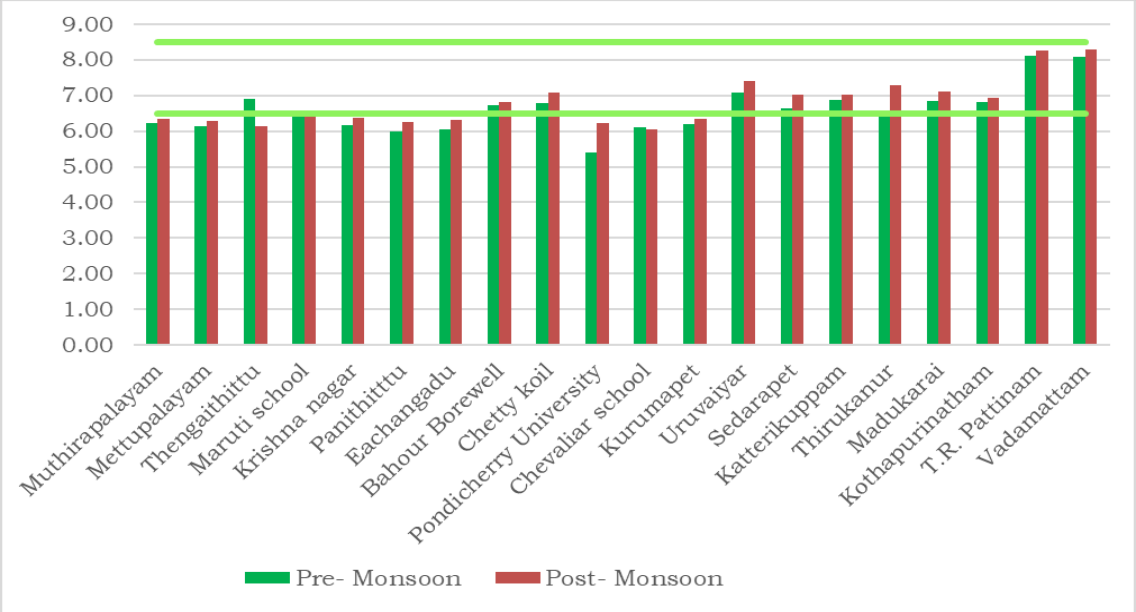


Fig.18 pH

Note:Permissible Limit – 6.5 to 8.5

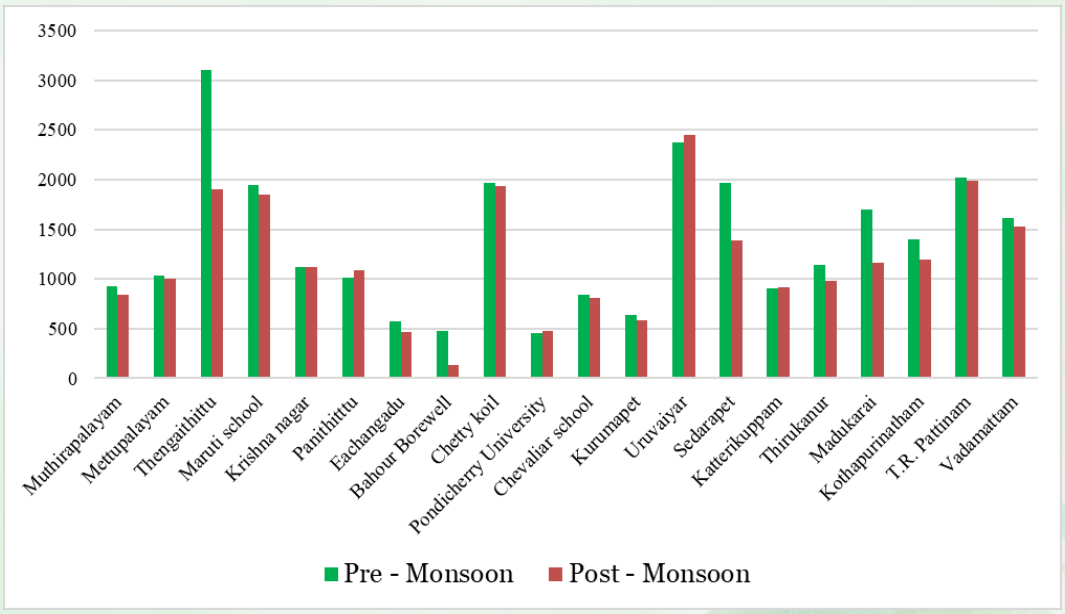


Fig. 19 Conductivity, µS/cm

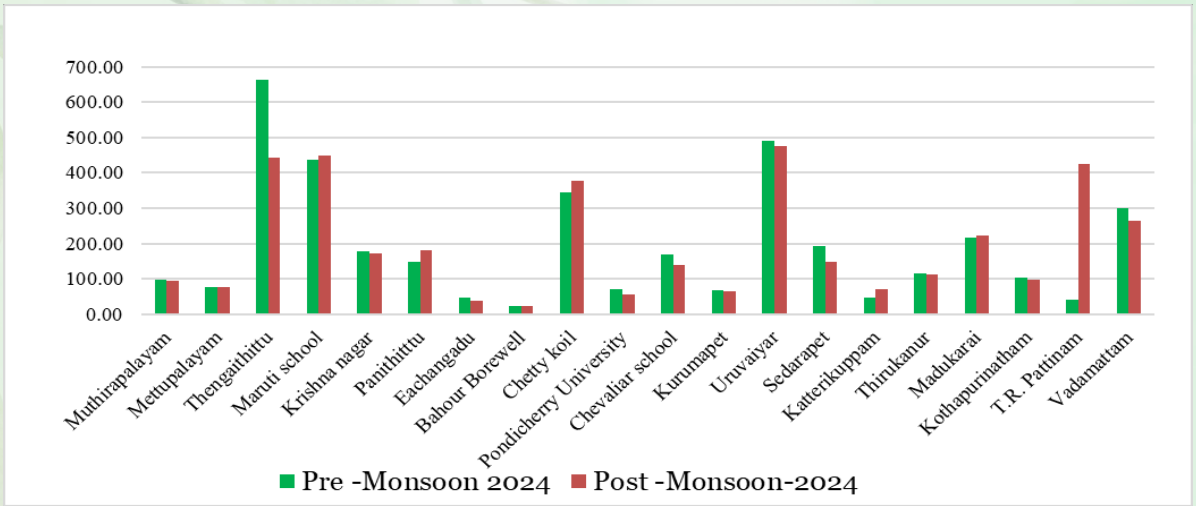


Fig.20 Nitrate, mg/l

Note: Permissible Limit – 1000 (*mg/l*)

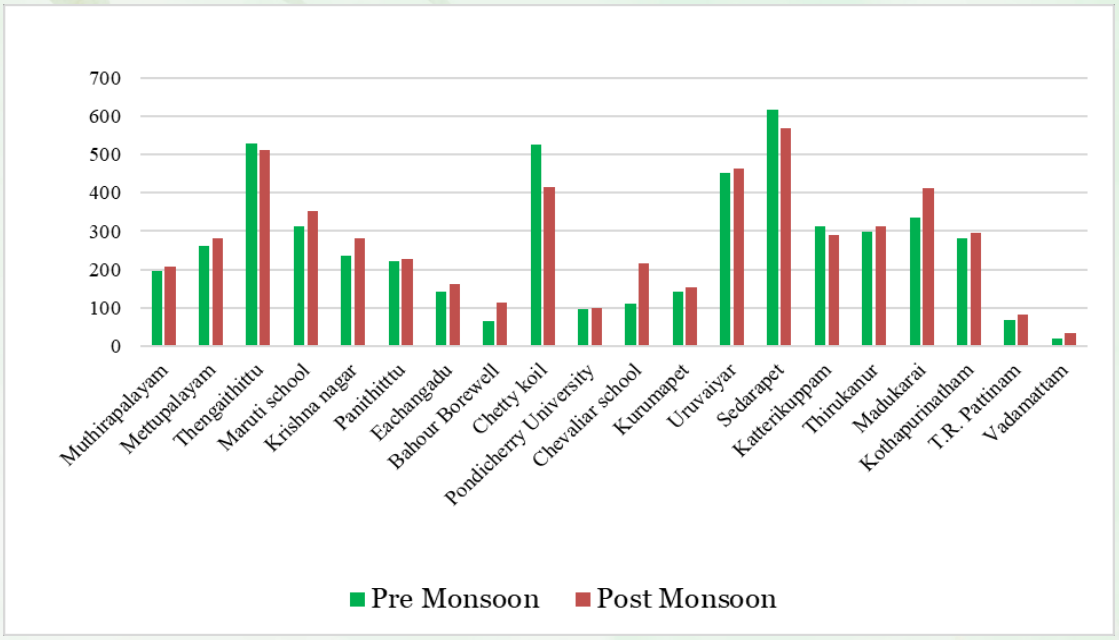


Fig.21 Total Alkalinity, mg/l

Note: Permissible Limit – 600 (*mg/l*)

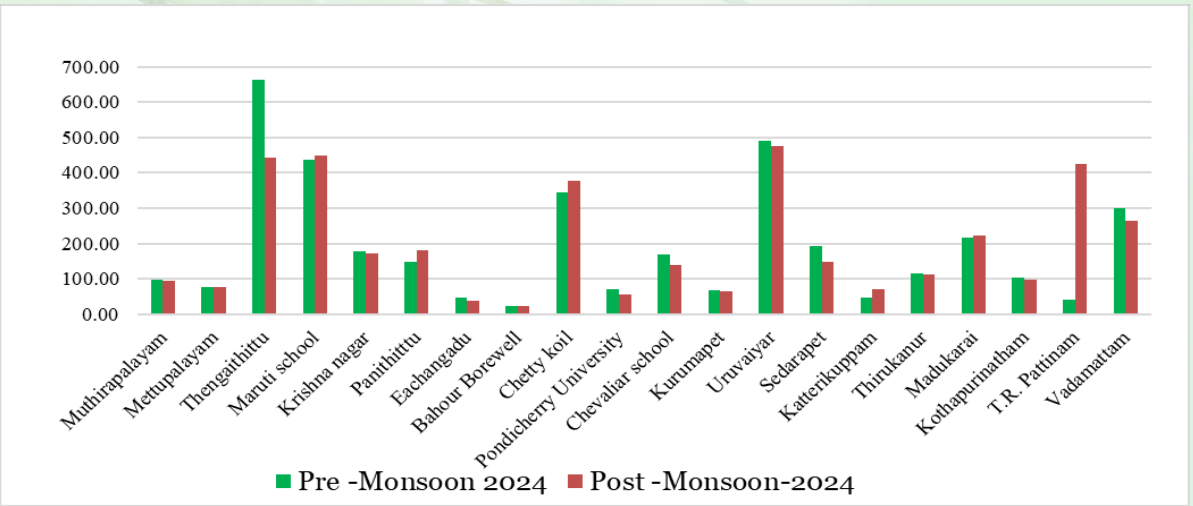


Fig. 22 Chloride, mg/l

Note: Permissible Limit- 1000 (*mg/l*)

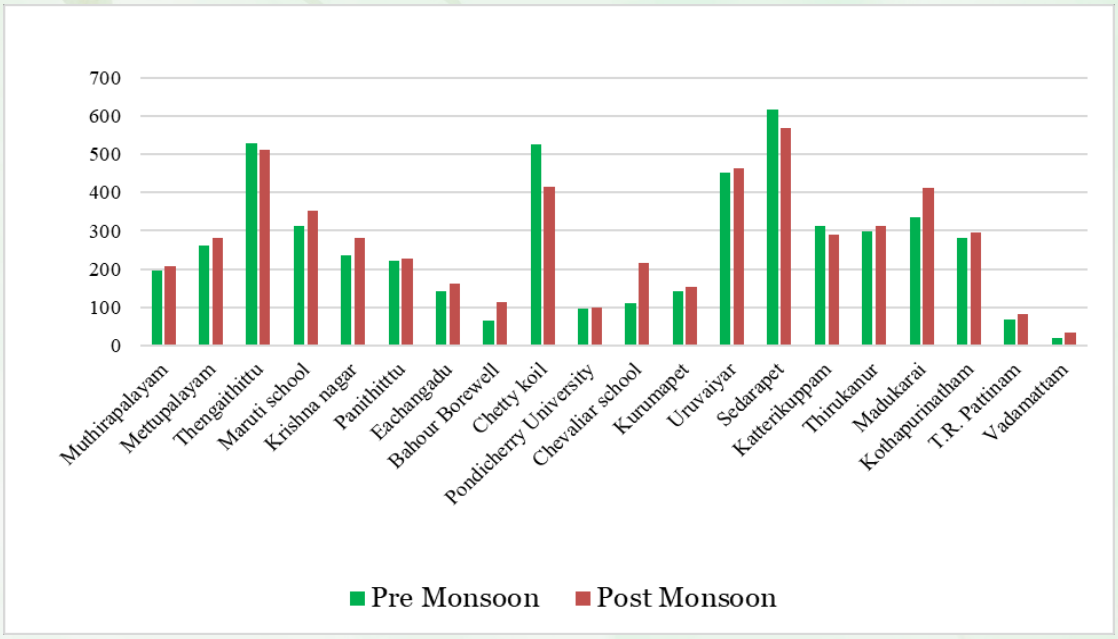


Fig.23 Total Hardness, mg/l

Note: Permissible Limit- 600 (*mg/l*)

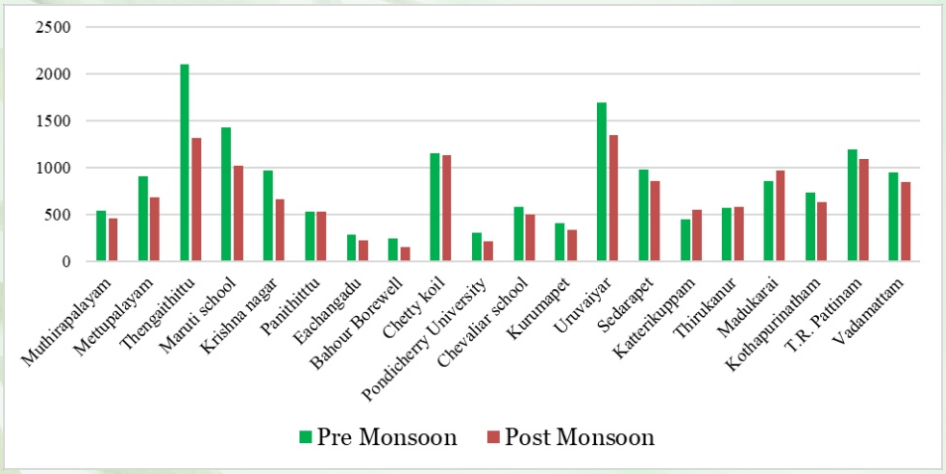


Fig.24 TDS, mg/l

Note: Permissible Limit –2000 (*mg/l*)

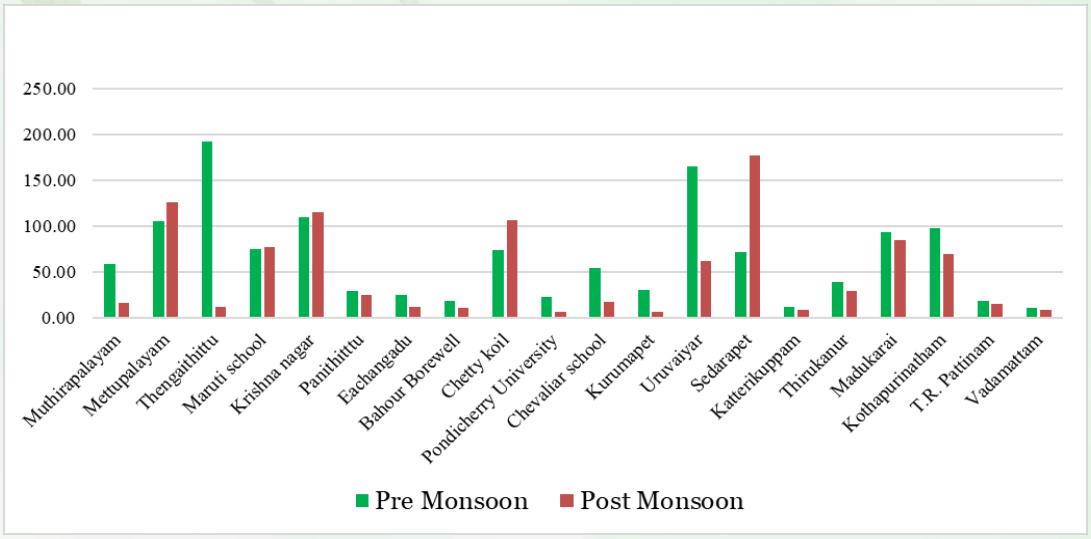


Fig.25 Sulphate, mg/l

Note: Permissible Limit - 400 (*mg/l*)

The ground water quality analysis reports revealed the following salient features:

- All the parameters are within the standard limit except pH, TDS and iron.
- pH value is out of range of 6.5 - 8.5 of the drinking water standard in some of the borewells viz, Eachangadu, Panithittu, Kurumapet, Muthirapalayam, Mettupalayam, Pondicherry University, Krishna Nagar and Maruthi School during both the season.
- TDS in Thengaithittu (2106 mg/l) is higher than the permissible limit during premonsoon.
- Concentration of Iron in Thengaithittu (pre monsoon 0.47 mg/l, post monsoon 1.16 mg/l) bore well is beyond the permissible limit of 0.3 mg/l in both the season.

- Though concentration of mercury in T.R.Pattinam was noticed (0.0007 mg/l), it is below the standard limit 0.001mg/l during postmonsoon. The other trace metals, viz., Copper, Cadmium, Lead, Total Chromium, Nickel, Zinc and Arsenic, are below the Detectable Limit in all the locations.

- Pesticides viz., Alpha BHC, Beta BHC, Gamma BHC, Delta HCH, OP DDE, PP' DDE, OP DDT, PP DDT, PP DDD, PP DDD, Alpha Endosulphan, Beta Endosulphan, Dieldrin, Aldrin, Malathion, Methyl Parathion, Chloropyriphos, Alachlor, Ethion, Phorate, Butachlor and Sulphate Endosulfan are below the Detectable Limit in all the locations.

- A study will be intiated to find the reasons for it.

Table 19. Quality of open well water in Mahe region

Sl. No.	Parameters	Pallur Open	Pandakkal	Acceptable limit	Permissible limit
	Station Code	2446	2447		
1	Latitude	11.732794 N	11.761178 N		
2	Longitude	75.538042 E	75.53695 E		
3	Dt.of Sampling	30.07.2024	30.07.2024		
4	Time	09.15 A.M	09.50 A.M		
5	Temperature	26.5	27.0		
6	pH	4.97	5.64	6.5-8.5	NR
7	Conductivity	357	253		
8	COD (mg/l)	BDL (DL: 5.0)			
9	BOD (mg/l)	BDL (DL : 1.0)			
10	Turbidity NTU	BDL (DL:1.0)		1	5
11	Nitrate -N	4.86	3.91		
12	Nitrite-N	BDL (DL - 0.02)			
13	Nitrate (mg/l)	21.5	17.3	45	NR
14	P. Alkalinity	BDL (DL - 5.0)			
15	Total	17	52	200	600
16	Chloride (mg/l)	45.7	24.3	250	1000
17	Ammonia -N	BDL(DL:0.4)			
18	Total Hardness	78.0	82.0	200	600
19	Calcium	62.0	68.0		
20	Magnesium	16.0	14		
21	Calcium as	24.8	27.2	75	200
22	Magnesium as	3.9	3.4	30	100
23	TDS (mg/l)	92.0	67.0	500	2000
24	TSS (mg/l)	BDL (DL : 10.0)			
25	FDS /TFS	BDL (DL :10.0)			
26	Sodium (mg/l)	29.12	12.48		

27	Potassium (mg/l)	6.43	1.03		
28	Sulphate (mg/l)	13.56	BDL (DL:5.0)	200	400
29	Ortho	0.13	0.28		
30	% Sodium	42.26	24.53		
31	SAR	1.4	0.6		
32	Fluoride (mg/l)	0.26	BDL(DL:0.2)		
33	Copper (mg/l)	BDL		0.05	1.5
34	Nickel (mg/l)	BDL		0.02	NR
35	Cadmium	BDL		0.003	NR
36	Lead (mg/l)	BDL		0.01	NR
37	Total	BDL		0.05	NR
38	Iron (mg/l)	0.06	0.09	0.3	NR
39	Zinc (mg/l)	BDL	0.12	5	15
40	Arsenic (mg/l)	BDL		0.01	0.05

BDL - Below Detectable Limit; DL - Detection Limit; NR - No Relaxation

pH value is found to be lower than the acceptable limit (6.5 – 8.5) of the drinking water standard in Pallur (4.97) and Pandakkal (5.54) open wells.

Coastal Water Quality Status

Coastal Water Quality is monitored under the National Water Quality Monitoring Programme every quarter at three locations

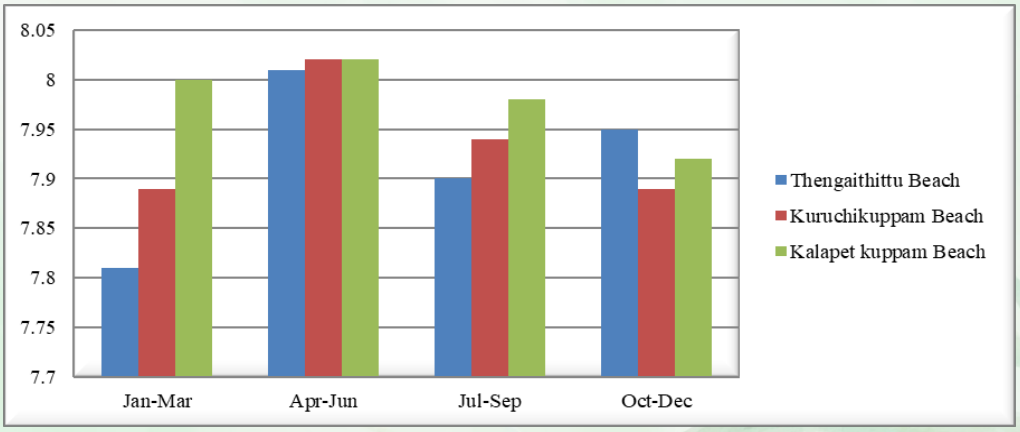


Fig. 26 pH

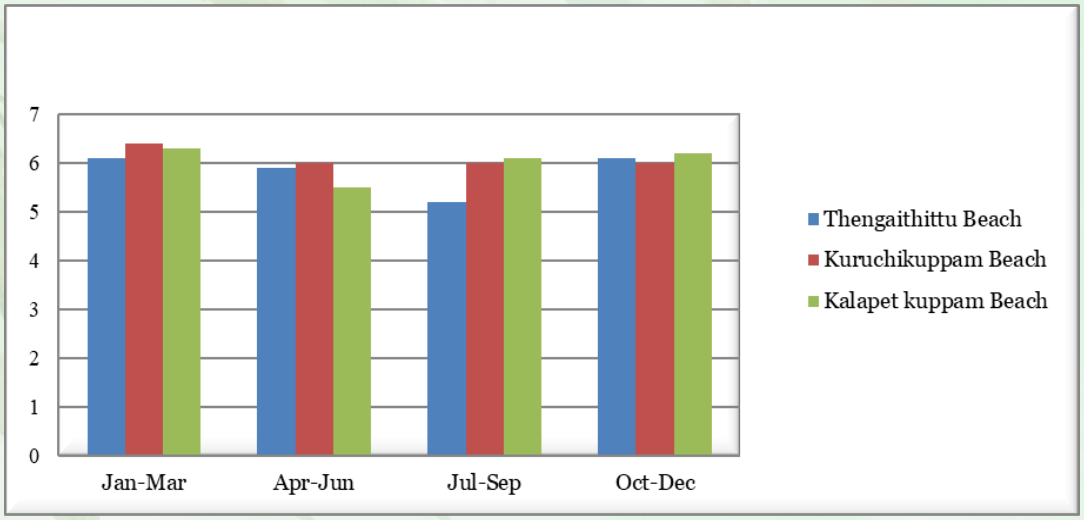


Fig.27 DO, mg/l

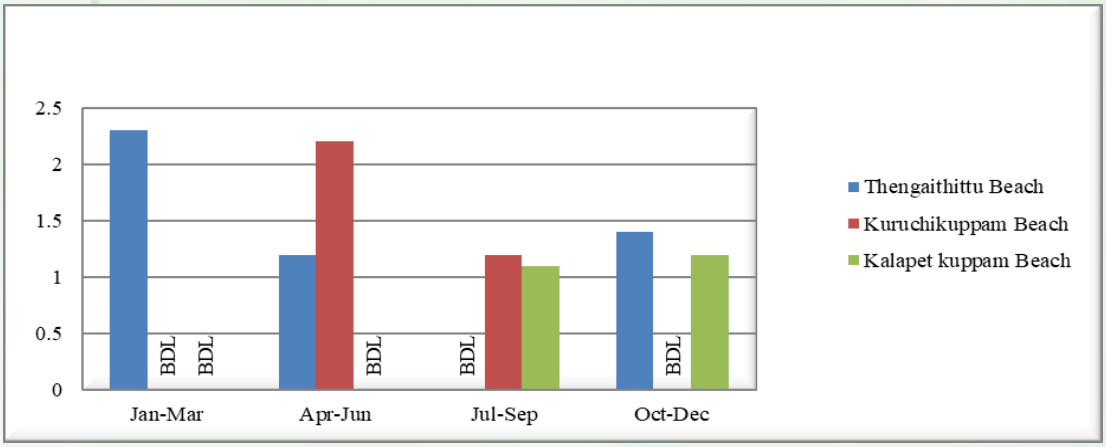


Fig.28 BOD, mg/l

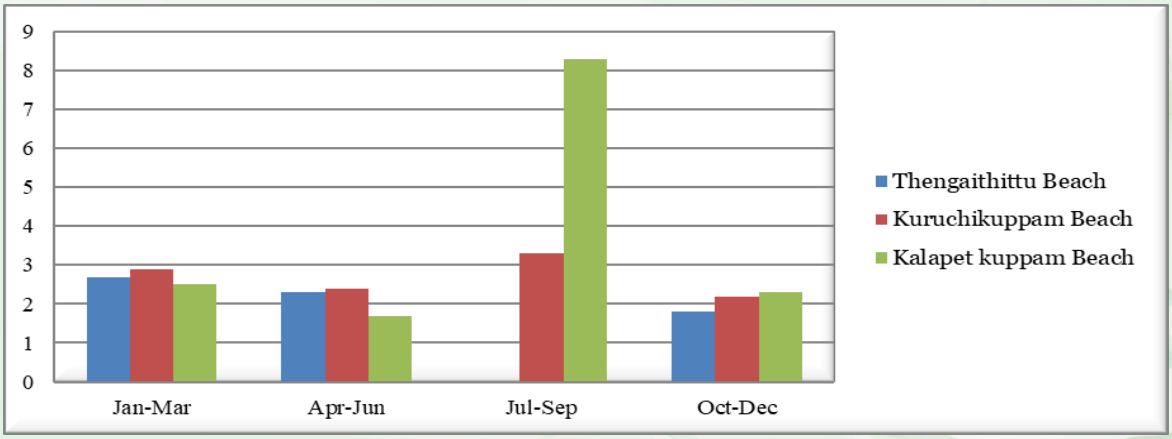


Fig 29. Turbidity, NTU

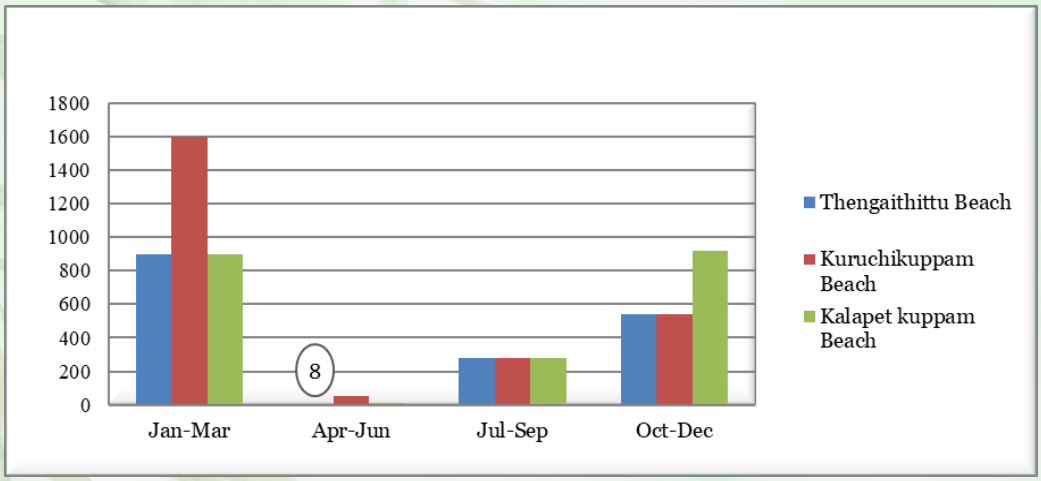


Fig.30 Faecal Coliform, MPN/100 ml

In all the locations, faecal coliforms in January, July, and October do not meet the primary water quality criteria of Class SW-II water—100MPN/100ml (for bathing, contact water sports, and commercial fishing). The reason Could be mixing of untreated sewage in the sea.

Bridging the Gap in Sewage Generation and Treatment

Table 20 provides details of sewage generation, the available treatment facility, and the gap in treatment.

Table 20. Details of sewage generation, sewage treatment plant and gap in treatment.

Sl. No	Region	Sewage Generation (MLD)	Available STP Capacity (MLD)	Gap in Treatment (MLD)
1.	Puducherry	71	56	15
2.	Karaikal	10.6	-	10.6
3.	Mahe	4	-	0.5
4.	Yanam	6	-	6
	Total	91.6	56	32.1

To improve the sea water quality and river water quality and bring down the value of Faecal Coliforms, 4 STPS are proposed to be installed in all the regions of the U.T. of Puducherry

The construction activity of the installation of 15 MLD STP in Dubrayapet, Puducherry, is progressing as scheduled. 90% of electromechanical instruments have been supplied. The work has reached physical progress of 75% and financial progress of 72%. The work will be completed by June 2025.

The construction of 11 MLD STP in Karaikal has reached 65% physical and 38% financial progress. It will be completed by June 2025.

Tender has been finalised for the construction of 0.5 MLD STP in Mahe, which will be completed by December 2025. Tender has also been finalised for the construction of 6 MLD STP in Yanam, which will also be completed by December 2025.

CHAPTER-9

SOLID WASTE MANAGEMENT

Disposal of Legacy Waste

All the accumulated legacy waste in the Puducherry Region was disposed of by the Biomining process, executed by M/s. Zigma Global Enviro Solution Pvt. Ltd., Erode. The earlier legacy waste of 5,33,300 MT was completely biomined in phase on 30.04.2023. Subsequently, the remaining 3,48,989 MT of the legacy waste was biomined in phase II and completed on 16.08.2024.

In the Karaikal Region, all the accumulated legacy waste, of 67,030 MT, was biomined and completed in July 2024. In the Yanam Region, all the accumulated legacy waste, of 21,600 MT, was biomined and completed in February 2025.

Fig. 31 Bio-mining area at Kurumbapet

Processing of Solid Waste

Puducherry Region

The processing of solid waste generated from the urban areas has been assigned to M/s. Green Warrior, Chennai. The firm has established a Facility with processing capacity of 370 TPD and commenced processing with effect from 01.02.2024. The processing plant consists of 5 mechanical trommels with 250 mt. conveyor belt, six wind rows, windrows turner, 40,000 Sq.ft MRF, RDF unit, Shredder-60 TPD and bailing machine-160 TPD.

Table 21.Details of various components of the processing facility

Compost	240 TPD
RDF	120 TPD
Recycled	2 TPD
Inert	8 TPD
Total	370 TPD

Table 22. Details of windrows

List of Windrow	Length	Breath	Height
First Windrow	32	16	10
Second Windrow	80	15	10
Third Windrow	67	15	11
Fourth Windrow	52	14	13
Five Windrow	54	31	16
Six Windrow	96	22	21

Fig.32 Facilities available in Kurumbapet Solid Waste Processing Plant

The composts are utilized by the farmers in Puducherry and Tamilnadu areas. RDF is sent to M/s. Dalmia Cement, Ariyalur, M/s. Ultra Tech, Trichy and M/s. Ambuja Cement plant, Andhra Pradesh for co-processing. Recyclable wastes are sold to the local vendors. The inert materials are stored separately and used for land filling of low lying area.

M/s. HR Square LLP, Hyderabad involving in processing of the solid waste generated from rural areas. 180 TPD of solid waste are being collected by this firm. After collection the solid waste is feed into the conveyor and by magnetic separator metals and heavy particles are segregated. Degradable items has been segregated, which is taken for windrow method of composting. RDF from non-biodegradable waste is subject to compactor and bailing machine and sent to cement factory.

Table 23. Details of Solid Waste Generation in Rural Local Bodies

Sl. No	Name of the Local Body (Commune Panchayats)	Quantity of Solid waste generation in TPD
1	Villianur	5
2	Nettapakkam	15
3	Ariyankuppam	8
4	Mannadipet	22
5	Bahour	20
	Total	**70**

Fig. 33 Processing of Solid waste from Rural areas by M/s. HR Square LLP., Kurumbapet

Karaikal Region

Karaikal Region consists of one Municipality and five Commune Panchayats. The details of solid waste generated in Karaikal region are given in the Table.24.

Table 24. Details of solid waste generation in the Karaikal Region

Sl. No	Name of the Municipality / Commune Panchayat	Quantity of Solid waste generation in TPD
1	Karaikal	40
2	Kottucherry	7
3	Nedunkadu	5
4	Neravy	3
5	T.R.Pattinam	5
6	Thirunallar	5
	Total	**65**

The Material recovery facility is being operated by M/s. HR Square. The unit has a Trommel for size segregation of 10mm and 50mm, and an organic waste shredder. The unit is carrying out vermi-composting and aerobic compositing for the organic matter. The unit segregates the inorganic matter like plastics, cardboard, glass, metal or paper and disposes of the waste through local traders.

Fig. 34 Mechanical separator

Fig.35 Vermi compost

Fig. 36 Compost

Fig. 37 RDF Plant

Facility available in Karaikal solid waste processing plant

Compost	55 TPD
RDF	10 TPD
Total	65 TPD

The bio-mining process is being carried out by M/s. Srinivas Waste Management. The unit has provided 3 sets of trommel mill for size separation i.e 85mm, 25mm and 9mm. RDF materials are recovered at 85mm and sent to cement plants (M/s. Dalmia Cement, Ariyalur), waste less than 85mm and greater than 9mm such as footwear, cloths, glasses, metals and plastics are sent to recyclers. The inert materials are recovered from 25mm to 9 mm which are being used to fill low-lying area like quarries in Tamilnadu region. And the Bio-earth obtained after 9mm are again used for filling parks and low lying areas. The unit was found segregating as stated above. The unit has processed 64,000MT out of tender awarded quantity of 77,850 MT.

Fig.38 M/s. Srinvas Waste Management, Paravaipet, Karaikal

Mahe Region

Mahe Region consists of one Municipality and it generates 12 TPD of solid waste. In-house composting of organic waste is being practiced traditionally. The dry waste is collected from the households by M/s. Northamps ENU Solutions, Cochin, Kerala. The Dry waste is segregated in Material Recovery Facility (MRF), Mahe. The dry waste is being sent to cement plants located in Tamil Nadu for co-processing.

Yanam Region

The Yanam region consists of one Municipality. It generates 20 TPD of solid waste. Door-to-door collection and transportation of solid waste have commenced since 08.12.2021. The Land for processing solid waste was identified and handed over to M/s. HR Square LLP, Hyderabad.Processing started on 20.01.2024. The process was stopped due to public opposition & subsequently recommended.

Bulk Waste Management

In the Puducherry, Oulgaret and Karaikal municipalities, there are 100, 89 and 33 bulk waste generators respectively. By-laws for bulk waste generators have been notified, and four service providers for the bulk waste generator have been empanelled. Sensitization programmes have been conducted for the bulk waste generators on scientific waste management. Few of them have established an in-situ waste management system. Higher charges are collected at the rate of Rs.4/- per kg from 1st February 2024 from other bulk waste generators who could not establish in-situ facilities due to space constraints.

M/s. Indira Gandhi Medical College and Research Institute, PIMS, JIPMER, M/s. Mahatma Gandhi Medical College and Research Institute, Pondicherry University, St. Joseph of Cluny Higher Secondary School, Hotel Accord, and other Institutions have set up infrastructure for composting green waste within their campuses.

Fig 39.Composting yard at JIPMER

Bio-methanation plant has been installed in 5 Medical colleges: M/s. Mahatma Gandhi Medical College and Research Institute, M/s. Sri Manakula Vinayagar Medical College and Hospital and M/s. Sri Lakshmi Narayana Institute of Medical Sciences. M/s. Pondicherry Institute of Medical Sciences and M/s. Aarupadai Veedu Medical College and Hospital have provided for vermi composting.

CHAPTER-10
PLASTIC WASTE MANAGEMENT

Plastic waste management is challenging for the Municipalities and the Local bodies. Its collection, segregation and disposal mechanism is very complex. There are two types of plastic waste. One is industrial virgin waste, which can be reprocessed entirely. 84 plastic product manufacturing units are in operation in the U.T. of Puducherry. These units generate 44000 TPA of plastic waste. All the waste is reprocessed in 21 plastic waste reprocessing units in Puducherry. The details of plastic manufacturing units in the U.T. of Puducherry are given in the Table.

Table 25. Plastic Manufacturing Units

Sl. No.	Type of Units	Total No.
1	Plastic items/articles	79
2	Multilayered Plastic (MLP)	03
3	Compostable plastic	02
	Total	84

Extended Producer Responsibility (EPR) for Plastic Packaging

The Ministry of Environment, Forest and Climate Change, Government of India, notified 'Guidelines on Extended Producer Responsibility for Plastic Packaging' in Schedule II. As per the notified Guidelines, Producers, Importers and Brand Owners (PIBOs) are required to ensure that the collection and processing of plastic waste generated due to plastic packaging of products introduced by them in the market. PPCC launched EPR portal is fully in operational. All the SUP industry are getting registered in the portal. Closure directions were issued to 39 units who have failed to get registered under EPR portal. The details of EPR Registration issued by the PPCC is given the Table: 26

Table 26. Details of EPR Registration

Category	EPR Registration obtained
Producer	84
Plastic Waste Processor (PWPs)	21
Brand Owner	03
Importer	19
EPR obtained directly from CPCB, Delhi	16
TOTAL	143

The details of plastic waste generated in the Urban and Rural areas are given in table:27

Table 27. Plastic waste generation in Urban Local Bodies

SL. No	Name of the ULB	Total quantity of PW generation in TPD
1	Puducherry	16.0
2	Oulgaret	16.0
3	Karaikal	6.0
4	Mahe	2.0
5	Yanam	3.00
	TOTAL	43.0

Table 28. Plastic waste generation in Rural Areas

Sl.No	Name of the Commune Panchayat	Quantity of Plastic waste Generated in TPD
1	Ariyankuppam	1.0
2	Villiyanur	1.5
3	Bahour	2.0
4	Mannadipet	2.2
5	Nettapakkam	1.5
6	Kottucherry	1.5
7	Nedungadu	1.0
8	Neravy	0.5
9	T.R. Pattinam	1.0
10	Thiruvallur	1.0
	TOTAL	**13.2**

All the plastic waste collected from Rural and urban areas is segregated, converted to Recycled Derive Fuel (RDF), and sent to the Cement Factories located in Tamil Nadu and Andhra Pradesh.

Chapter – 11
ELIMINATION OF SINGLE-USE PLASTICS

Elimination of Single-Use Plastics is one of the PPCC's flagship programme. The Government of India banned 9 types of SUP, with effect from 30 June 2022. The Government of Puducherry has imposed ban on 9 types of SUP in the year 2009. An Action Plan on the Elimination of Single-Use Plastic has been notified, and a Special Task Force under the Chairmanship of the Chief Secretary has been constituted. It meets once every six months to review the various actions taken towards eliminating SUP in the Union Territory of Puducherry.

Joint Inspection of Enforcement Authorities

PPCC has conducted many drives and inspections with the implementing authorities. Details of inspection, SUP seized and fine imposed is given in the Table 29.

Table 29. SUP inspections conducted by the Enforcement Authorities

Month	No of Inspection	Fine Imposed(Rs)	Seized quantity (Kg)
April 2024	5	6500	10.95
May 2024	5	6500	4.9
June 2024	4	2000	2.6
July 2024	10	7500	67.3
August 2024	107	25300	1436.2
September 2024	20	5400	7.65
October 2024	27	6900	85
November 2024	10	1700	24.1
December 2024	0	0	0
January 2025	5	2500	5
February 2025	2	0	1880
March 2025	33	3400	29
Total	**228**	**67,700**	**3,552.7**

Table 30. List of SUP manufacturing units closed

Sl. No	Name of the Industry
1.	M/s. Sri Ganapathy Polymers
2.	M/s. Murugan Plastics
3.	M/s. SSN Polymers
4.	M/s. Rohith Polymers
5.	M/s. Velu Polymers

Fig.40 Checking Thickness in M/s. Sri Ganapathy Polymers

Fig.41 Sealing of M/s. Velu Polymers

Environment Compensation of Rs. 1.6 lakhs were collected from M/s. Sri Ganapathy, 1 Lakh from M/s. Murugan Polymers and 1 lakh from SSN Polymers. M/s. Rohith Polymer, Villianur and M/s Velu Polymer, Ramanathapuram, were sealed for manufacturing banned SUP and seized 1.9 Tons of banned SUP.

Fig.42 Joint inspection at shops by the Implementing authorities

Though PPCC, in association with other implementing authorities, conduct intensive raids and inspections, the usage of SUP could not be eliminated. The reason is the migration of SUP from adjoining States. In order to contain the migration of SUP products from neighbouring states, a squad of PPCC with Local bodies inspected all the entries to Puducherry and alerted the check post.

Fig 43. SUP checking in Interstate borders

Stakeholders Consultation meeting to eliminate Single Use Plastic (SUP) in Arrack shops

A consultation meeting was convened with the Tahsildar (Excise) and Liquor shop owners Association on 07.02.2025. 68 liquor/arrack shop owners and manufacturers of compostable pouches and disposal cups participated in the meeting. Liquor and arrack shops have started to use compostable pouches and disposable cups.

Fig. 44 Stakeholders Consultation meeting

Declaration of SUP Free Campus

Standard Operating Procedures (SOP) for declaring a SUP-free campus were circulated to all the Schools, Colleges, Industries, Government offices, Markets and Temples

727 Schools, 60 Colleges / Educational institutes, 30 Government Offices including Raj Nivas, Legislative Assembly, Chief Secretariat, 200 industries, 7 Markets and 17 Temples have been declared as SUP free campuses.

Fig 45. Declaration of Single Use Plastic Free Campus in Schools

Road Making using seized Single Use Plastic

As a pilot scale, 200 mt. the Road was laid using seized SUP at Edayarpalayam, ACP, near Lenovo. 2000 mt. Road using seized plastic was laid in Korukumedu. A 400 m road has been laid in Karunakaran Street, Nellithope, by the Puducherry Municipality. 370 mt. the Road was laid in Solai Nagar, Pondicherry Municipality , 500 mt. the Road was laid in Karuvadikuppam, Oulgarate Municipality

Fig:46. Plastic road at Karuvadikuppam

Fig: 47. Plastic road at Solai Nagar

Fig 48. Plastic road Lenin Street

LED Awareness Vehicle

Puducherry Pollution Control Committee has produced a documentary movie on the ill effects of using SUP. It is being screened through an LED van in Public places in urban and rural areas and in cinema theatres.

Fig 49. Awareness through LED vehicle in rural area

CHAPTER-12

BIO-MEDICAL WASTE MANAGEMENT

Puducherry witnesses a large scale of establishments of Health Care Facilities (HCF). Details of HCFs present in the U.T. of Puducherry are given in the Table 31.

Table 31. List of healthcare facilities located in the U.T. of Puducherry

S. No.	Region	No. of bedded HCFs	No. of non-bedded HCFs
1	Puducherry	76	302
2	Karaikal	22	79
3	Mahe	3	6
4	Yanam	3	3
	Total number of HCFs	104	390

Out of 494 HCF, 492 HCF have obtained authorisation under the Bio Medical Waste Management Rules, 2016.

The total quantity of bio-medical waste (BMW) generatedin the U.T. of Puducherry is 4.6 TPD. All the HCFs have entered into agreements with the Common Bio Medical Waste Treatment Facility (CBMWTF) for the collection, transportation and disposal of BMW. All BMW generated in the Puducherry region is disposed through M/s. Pondicherry Solid Waste Management Pvt. Ltd., Thuthipet. This facility has an incinerator, an Autoclave Microwave oven and a secure landfill. The HCFs in Yanam are disposing of the BMW through a CBMWTF available in EVB Technologies in Rajamundry, Andhra Pradesh. The HCFs in Mahe are disposing their BMW through M/s IMAGE (P) Ltd., authorised by Kerala State Pollution Control Board—the Govt. Hospitals in Mahe are disposing of through an Incinerator available at the General Hospital, Mahe.

Bar-code system

Implementation of Centralised Barcode System for Tracking of Biomedical Waste (CBST-BMW)" initiated by CPCB, Hon'ble Supreme Court of India in the matter of IA No. 181745 of 2019 and I.A. No. 46339 of 2020, in W.P.C. 13029 of 1985 directed MoEF&CC and CPCB to work out a national bar - coding system / portal for tracking of biomedical waste. Hence, CPCB in compliance to Hon'ble Supreme Court direction has initiated a project "Implementation of Centralized Barcode System for Tracking of Biomedical Waste (CBST - BMW)" engaging M/s. Atishay Limited, Bhopal.

The link www.bmwbarcode.in was circulated to all CBWTF and directed them to register. M/s PSMPL, Thuthipet, has registered in the Centralised barcode system. So far, 72-bedded HCFs have entered the barcode system. Others are also directed to comply with it. Category-wise daily data is being received by PPCC.

GPS & OCEMS

All the four vehicles involved in the collection and transportation of BMW by the CBMWTF are equipped with GPS to monitor their proper movement closely.

The transport of BMW from the HCFs to the CBMWTF is being monitored online. The facility's emissions are or being monitored by the OCEMS system by PPCC and CPCB.

Fig. 50 Inspection of Common Bio-Medical Waste Treatment Facility, Thuthipet

CHAPTER–13
HAZARDOUS WASTE MANAGEMENT

The Ministry of Environment, Forest and Climate Change has notified Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 by superseding the earlier Hazardous Waste Rules, 2008.

Hazardous waste means any waste which because of characteristics such as physical, chemical, biological, reactive, toxic, flammable, explosive or corrosive, causes danger or is likely to cause danger to health or environment, whether alone or in contact with other wastes or substances, shall include:

(i) Waste specified under column (3) of Schedule I,

(ii) Waste having equal or more than the concentration limits specified for the constituents in class A and class B of Schedule II or any of the characteristics as specified in Class C of Schedule II, and

(iii) Wastes specified in part A of schedule III in respect of import or export of such wastes or the wastes not specified in part A but exhibiting hazardous characteristics specified in part C of schedule III;

Other waste means waste specified in part B and part D of schedule III for import or export and includes all such waste generated indigenously within the country.

This rules stipulates that all occupier involved in handling, generation, collection, reception, treatment, storage, reuse, recycling, recovery, pre-processing, utilization including co-processing and disposal of hazardous waste has to be obtain authorisation from respective State Pollution Control Board or Committee for above activities.

In Puducherry, 149 industries have been identified as hazardous waste generating units, which generate 35737 TPA of hazardous waste for the year 2024-2025. The details of hazardous waste generation are given below:

Table 32. Hazardous waste generation -Region-wise for the year 2024-2025

Sl. No.	Region	The quantity of Hazardous waste generated in TPA				Total
		Landfillable	Incinerable	Recyclable	Utilizable	
1.	Pondicherry	17	55	2208	30465	32745
2.	Karaikal	2748	0	233	10	2992
3.	Yanam	--	--	--	--	--
4.	Mahe	--	--	--	--	--
	Total	2765	55	2441	30475	35737

Circular Economy

(i) MoEF & CC notified the Extended Producer Responsibility (EPR) for 'Waste Tyre' on 21st July 2022 through an amendment in Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 to ensure environmentally sound management of waste tyres. The Rules function based on the concept of EPR where the producers (including importers) of tyres are responsible for recycling/ retreading waste tyre and using recovered materials from wastes into reclaim rubber, crumb rubber, recovered carbon black and pyrolysis oil & char. In this regard, M/s. MRF Limited has registered as a Producer in the Extended Producer Responsibility (EPR) CPCB's portal. There are no tyre recyclers in the Union Territory of Puducherry.

(ii) MoEF & CC notified Extended Producer Responsibility (EPR) for 'Used oil' on 18th September 2023 through amendment in Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 to ensure environmentally sound management of used oil. The rules function based on the concept of EPR where the producers (including importers) of base oil or lubrication oil are responsible for recycling of used oil through purchase of extended producer responsibility certificate from the recyclers. There are 2 producers viz., M/s. S.J Oils and M/s. Shree Cosmic Industries are in operation. There is no used oil recycler in U.T of Puducherry.

(iii) The total hazardous waste generation in the U.T of Puducherry is 35737 MT of which 92% i.e. 2441 MT is recyclable and 30475 MT% is utilizable (Pre-processing, co-processing & raw materials) hazardous waste are brought under circular economy.

CHAPTER -14
E-WASTE MANAGEMENT

The Ministry of Environment, Forest and Climate Change has notified the E-waste Management Rules, 2022.

In U.T. of Puducherry, around 71.47 TPA of e-waste is generated and disposed of through authorised facilities. Oulgaret Municipality has designated an e-waste collection centre through M/s Planet Savers in Puducherry. There are currently 10 Producers and 2 manufacturers registered in the CPCB EPR portal. PPCC has directed all the other electrical and electronic manufacturers to register in the CPCB EPR portal.

Awareness program on E-waste management

- An interview byte was aired on 15.10.2023 in association with Karo Sambhav and Suryan FM Puducherry, a radio awareness programme.
- A webinar was conducted on 29.12.2023 on the theme of reducing E-Waste.
- An E-waste Training was provided to Government functionaries on 09.02.2024.
- On 20 March 2024, a one-day E-waste Workshop on building a sustainable E-waste ecosystem in Puducherry was held for municipalities, industries, the education department, and NGOS. The purpose of the workshop was to disseminate information to the public regarding the detrimental effects of e-waste resulting from improper disposal and the importance of its management.
- Awareness programs are conducted in schools and colleges through the EIACP–Hub.
- On 27.01.2025, in coordination with the Department of Information Technology, an awareness programme was organised to educate all government officials on the disposal of e-waste. All officials from various departments participated in the event.

Fig.51 Workshop on Building a sustainable E-Waste ecosystem in Puducherry

CHAPTER-15
ISSUE OF DIRECTIONS AND SHOWCASE NOTICES

PPCC issues direction under Section 33 (A) of Water (Prevention and Control of Pollution) Act, 1974, Section 31 (A) of Air (Prevention and Control of Pollution) and Section 5 of the Environmental (Protection) Act, 1986 to the industries which violates the provisions of the said Acts. The details of various directions issued during 2024-25 are given in the Table.

Table 33. Details of directions issued for the period 2024-2025

CONSENT/AUTHORIZATION/DIRECTION/SCN ISSUED STATUS	
Consent to Establish (CTE)	134
Consent to Operate (CTO)/RENEWAL	127
Hazardous Waste Authorisation	47
Biomedical Waste Authorisation	68
Direction Under the Air and Water Act	232
Direction Under the Environment (Protection) Act, 1986	16
Direction Under Hazardous Waste Management	61
Direction Under E¯waste Management	6
Direction Under Solid Waste Management	1
Direction Under Plastic Waste Management	5
Show Cause Notice Under the Air and Water Act	56
Show Cause Notice under the Environment (Protection) Act 1986	3
Show Cause Notice Under E¯waste Management	4
Show Cause Notice Under Hazardous Waste Management	101
Show Cause Notice Under Plastic Waste Management	6
Closure Direction issued	8

CHAPTER-16
GREEN PUDUCHERRY MISSION

A minimum of 33 % tree cover is essential to maintain ecological balance. Trees ensure a controlled ambient temperature, abate air pollution, control noise levels, enhance precipitation and rainwater infiltration, reduce soil erosion, conserve biodiversity, and add aesthetic value.

According to the India Forest Survey Report 2021, the U.T. of Puducherry has only 10.8 % green cover. The non-availability of land and urbanization are the two main constraints on increasing green cover in the U.T. of Puducherry.

The Department of Science, Technology and Environment has formulated an Action Plan with seven components to enhance Puducherry's green cover. The plan envis planting at one lakh tree saplings. The programme was inaugurated by His Excellency, the Lieutenant Governor, and the Hon'ble Chief Minister on 2nd October 2024.

Fig 52. Inauguration of green Puducherry mission

So far, Forty thousand saplings have been planted. The goal of planting one lakh saplings will be achieved by 2025.

Table 34. Details of the Sapling planted

Sl. No	Components of the Action Plan	No. of saplings planted
1	One home , One Tree	17,850
2	Urban plantation	47
3	Rural afforestation 3.1 Waste land to Green land 3.2 Greening water bodies 3.3 Greening dunes	 13,260 300
4	Restoring sacred Groves	1,100
5	Green School Campus	3,190
6	Greening Industry	5,012
7	Green Office premises	432
	Total	**41,191**

CHAPTER-17

PUDUCHERRY COASTAL ZONE MANAGEMENT AUTHORITY

Genesis of Puducherry Coastal Zone Management Authority:

The Ministry of Environment & Forest & Climate Change, Government of India passed a Notification on 19th February 1991 under the Environment (Protection) Act, 1986 known as 'Coastal Regulation Zone Notification, 1991' where in it is declared that the coastal stretches of seas, bays, estuaries, creeks and backwaters which is influenced by tidal action up to 500 meters from HTL and the land between LTL and HTL as Coastal Regulation Zone and imposed certain restrictions in the said Coastal Regulation Zone.

Based on the Guidelines in the CRZ Notification the Coastlines of the Puducherry, Karaikal, Mahe and Yanam regions in the U.T. of Puducherry were studied and a Coastal Zone Management Plan (CZMP) was prepared by the Town and Country Planning Department, Puducherry during 1992. The same was approved by MOEF and published in State Gazette vide G.O. Ms. No. 18/93/Hg dated 31st December 1993. Till 1998, the provisions of CRZ Notifications were monitored and enforced by a High Power Committee of the Development Department, Govt. of Puducherry and the regulation of construction activities in CRZ was dealt by the Pondicherry / Karaikal / Mahe / Planning Authorities in their respective regions.

In 1998, Puducherry Coastal Zone Management Authority (PCZMA) was constituted and published in Gazette of India on 26th November 1998 based on the Supreme Court Direction to the Central Government to consider setting up of State & National Coastal Zone Management Authorities for ensuring effective implementation of CRZ Notifications. PCZMA was subsequently was reconstituted in 2002, 2005, 2008, 2012, 2015, 2018 & 2022.

Constitution of PCZMA

The Ministry of Environment Forest and Climate Change in exercise of the powers conferred by sub-sections (1) and (3) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) (hereinafter referred to as the said Act), constitutes the Puducherry Coastal Zone Management Authority (hereinafter referred to as the Authority) for a period of three years from

the date of Publication i.e., 3rd January, 2022. Since, the validity of the reconstituted PCZMA expired by 02.01.2025, the same is under revision.

Regional Coastal Zone Management Committee (RCZMC)

The Government of Puducherry vide G.O .Ms. No. 26/ 2014 / Envt dated 08.12.2014 has constituted the district level committee under the Chairman ship of District Magistrate to assist the State / U.T level Coastal Zone Management Authority. Since the UT of Puducherry geographically consists of four regions located far away from each other namely Puducherry, Karaikal, Mahe and Yanam, the Government of Puducherry considered it necessary to constitute a Regional Coastal Zone Management Committee (RCZMC) in each of the four regions for the purpose of implementation and enforcement of provisions of CRZ Notification in the U.T of Puducherry. The committee members list can be viewed from the following link;
https://dste.py.gov.in/pczma/Pdf/Notification/Constitution_of%20_Regional_CZMC.pdf

Regulatory Functions:

Puducherry Coastal Zone Management Authority (PCZMA) is a regulatory body for protecting and improving the quality of the coastal environment and regulating the activities in the coastal area as per the prevailing CRZ Notification. PCZMA coordinates with the Union territory pollution Control Committee in preventing and abating coastal environmental pollution in the coastal areas of Puducherry U.T.

Puducherry and its Coast:

The Union Territory of Puducherry has a coastline of 45 kms, stretching along the Bay of Bengal and to some extent along the Arabian Sea out of which Puducherry region alone has 24 Km of coast line, Karaikal has 20 km stretch and Mahe has 1 km Stretch of Coastline and 192 kms of Tidal influenced water bodies in the U.T of Puducherry with a very wide range of coastal eco systems such as estuaries, lagoons, mangroves, backwaters, sand stretches etc.

Coastal Zonation:

The Coastal Zone area is classified into CRZ-IA, CRZ IB, CRZ-II, CRZ – III, CRZ-IIIA, CRZ - IIIB CRZ-IVA, IVB, based on the CRZ Notification, 2011 and 2019 and has been included in the CZMP of Puducherry. The activities permitted and prohibited in the respective CRZ area can be read from the CRZ Notification, 2011. The zonations were incorporated in the existing CZMP prepared under CRZ, 2011 which was approved by the MoEF&CC on 24.10.2018.

CRZ Notification, 2019:

The Ministry of Environment, Forest and Climate Change, Government of India published CRZ Notification, 2019 replacing earlier CRZ Notification, 2011. Until the existing Coastal Zone Management Plan (CZMP) prepared under CRZ, 2011 is not revised, the CRZ Notification, 2019 cannot be implemented. The Government of Puducherry has prepared the CZMP through the National Centre for Sustainable Coastal Management (NCSCM), Chennai an autonomous Institute under the MoEF&CC which is a notified agency as per Office Memorandum dated 08.08.2019 of MoEF&CC.

NCSCM has submitted the draft CZMP for U.T. of Puducherry. As per the guidelines issued by GoI Public consultation is mandatory for obtaining views and opinions from the Public on the draft CZMP. The Public Hearings were conducted in Mahe on 24.03.2023 and Yanam on 12.04.2023 and in Puducherry and Karaikal Public Hearings are yet to be conducted.

After the conduct of Public Hearings in Puducherry and Karaikal the draft CZMPs has to be placed before the PCZMA. The modifications, recommendations suggestions received has to be incorporated and sent to the Scrutiny Committee at NCSCM, Chennai followed by the CZMP has to be submitted to NCZMA / MoEF&CC for necessary approval.

The draft CZMPs can be downloaded from the below mentioned link:
https://dste.py.gov.in/ppcc/CZMP-2019.html
https://dste.py.gov.in/pczma/Draft_CZMP_2019.html

Functions of PCZMA are as follows:

PCZMA carries out the following activities for protecting and improving the quality of the coastal environment and preventing and abating coastal environmental pollution in the coastal areas of Puducherry U.T.

1. Examination of proposals for changes or modifications in classification of CRZ areas and in the Coastal Zone Management Plans (CZMP) received from the Puducherry State Government and making specific recommendations to the National Coastal Zone Management Authority (NCZMA) thereof.
2. Enquire into cases of alleged violations of the provisions of the CRZ Notification and to take action.
3. Deal with environmental issues relating to CRZ which may be referred by Puducherry Government or NCZMA
4. Identify ecologically sensitive areas in CRZ and formulate area-specific management plans for the identified area
5. Identify coastal areas highly vulnerable to erosion or degradation and formulate area-specific management plans
6. Identify economically important stretches in the CRZ and prepare Integra ted Coastal Zone Management Plan for the same
7. Obtaining NCZMA approval for plans prepared.
8. Examine all project proposals in CRZ areas and give their recommendations
9. Ensure compliance of all specific conditions that are stipulated in CZMP of Puducherry.
10. Furnish report of its activities to NCZMA once in six months.

Procedure for CRZ Clearance:

1. **Online Process Flow under PARIVESH 2.0:**
   PCZMA has issued Office Memorandum on 08.5.2024 wr.t. Standard Operating Procedure (SoP) for seeking CRZ clearance as per the CRZ Notification, 2011 and 2019.

Applicant Apply in online Parivesh Portal with necessary documents & Check list as per Guidelines issued by MoEF&CC MS , PCZMA shall forwarded to Office executive Office Executive scrutinize the application Obtaining Approval for placing in the meeting from M.S(PCZMA) Placing in Meeting within 60 Days period from the Submission of completed application Agenda preparation for meeting PCZMA Meeting Minutes Preparation Approval from Chairman (PCZMA) Hosting in Website and sending it to MoEF&CC & Line members Preparation of Recommendation letter Collection of Balance Fee Issue of NoC / Recommendation letter / Forwarding to (MoEF&CC / SEIAA / Planning Authorities / Govt) as applicable.

PCZMA meeting:

The Authority meets periodically to review the CZMP of Puducherry, discuss Environmental issues related to CRZ region and examine project proposals in CRZ region (all constructions / developments within 500 meters from High Tide Line of sea, HTL to 100 mts or width of the creek whichever is less on the landward side along the tidal influenced water bodies that are connected to the sea and the distance upto which development along such tidal influenced water bodies is to be regulated shall be governed by the distance up to which the tidal effects are experienced which shall be determined based on salinity concentration of 5 parts per thousand (ppt)).

Table: 35 Details of the Project Proposals placed in PCZMA Meeting for CRZ clearance and Action Taken during 2024 - 2025

Details of PCZMA Meeting	Date	No. of Projects Cleared/Recommended	No. of Projects Deferred	No. of Projects Rejected
51st Meeting	23.01.2024	26	3	3
52nd Meeting	01.10.2024	16	1	-
53rd Meeting	26.12.2024	04	1	1

OTHER ACTIVITIES

The Marine Spatial Planning for the U.T. of Puducherry

1. Marine Spatial Planning: Workshop on 'Implementation of Marine Spatial Planning for the UT of Puducherry under Indo-Norwegian collaboration on Integrated Ocean Initiative' was organized on 18.09.2024 and 19.09.2024. Five projects from Government and Private sectors have been mapped in the SAHAV Portal developed under Marine Spatial Plan till date.

2. Automated Beach Monitoring System: Automated Beach Monitoring System (ABMS) was installed by the National Centre for Coastal Research, MoES, Chennai to monitor the coastal stretch of Puducherry beach along the northern reef on real time basis.

3. Shoreline Management Plan: Shoreline Management Plan (SMP) for the Union Territory of Puducherry was prepared by the National Centre for Coastal Research (NCCR), Ministry of Earth Sciences (MoES), Chennai and submitted on 30.09.2024.

4. Beach Cleaning Drive: Beach cleaning drives to preserve coastal ecosystems and to promote awareness on coastal pollution were conducted at Veerampattinam on the occasion of World Ocean Day – 08th June 2024 with the participation of 230 volunteers.

5. International Coastal Cleanup Day: The theme of the International Coastal Cleanup Day-2024 is 'Sea the Change'. ICCD was observed on 21st September, 2024 to clean up the coastal area and to protect the marine environment and also to create awareness of coastal conservation among the public at Veerampattinam Beach, Puducherry and at Emerald Beach, Karaikal with a participation of 212 participants and 230 participants respectively.

Inauguration of beach clean drive

Beach Cleanup

Fig.53 Beach cleanup drive

Citizen led cleanup drive of ***'Swachh Sagar, Surakshit Sagar' campaign*** at Veerampattinam Beach, Puducherry on 21.09.2024.

Fig.54 Aerial view of the team participating in the beach clean-up drive.

International Coastal Clean- up at Emerald Beach in Keezhakasakudy, Karaikal on 21.09.2024.

Fig.55 Inauguration of Beach Clean- up drive

Fig.56 Beach Clean- up

Fig.57 Team participated in the Beach Cleanup drive

CHAPTER–18

PUDUCHERRY COUNCIL FOR SCIENCE & TECHNOLOGY

The PCS&T an apex autonomous body to promote the Science & Technology awareness/applications / innovations in the U.T. of Puducherry is functioning in the Department of Science, Technology & Environment since 23rd June 1998. The Council functions with the financial support of DSTE, Puducherry & DST, GOI by way of Grants-in-aid, and performs on the following mandated objectives:

- To identify areas for the application of S&T to the developmental needs of this Territory.
- To advise the Government on the formulation of policies and measures that will promote the applications of Science and technology to the identified needs, objectives, and goals.
- Financial assistance for pursuing research in Science, Technology and Environment.
- Popularisation of science among students and the public.

Conduct of Elocution Competition during the Observance of International Asteroid Day – 2024 on 19.07.2024

Elocution Competition on the Observance of International Asteroid Day 2024 was organised by PCS&T at Dr. Abdul Kalam Science Centre and Planetarium, Puducherry on 19.07.2024. Students from Class V1 to VIII participated in the event.

Dr. R. Rajavelu, Associate Professor and Head of the Department of English, and Dr. M.E. Krishnakumar, Associate Professor of Tamil, both from Kanchi Maa Munivar Government Institute for Post Graduate Studies and Research in Puducherry, assessed the contestants. The topics assigned for the English and Tamil Competition are "Origin of the Solar System and Exoplanets" and "**சூரிய குடும்பம் மற்றும் புறக்கோள்களின் தோற்றம்**"

Fig.58 Competition

Art & Craft Competition - World Nature Conservation Day – 2024 on 30.07.2024

Art and Craft Competition on the Observance of World Nature Conservation Day 2024 was organised by PCS&T at Dr. Abdul Kalam Science Centre and Planetarium, Puducherry on 30.07.2024.

One hundred seventy students from Classes V1 to VIII from 16 different institutions (both in Government and Private schools) participated in the event. Thiru. A. Krishnan, MFA (Sculpture), Fine Arts Teacher, Directorate of School Education, Puducherry and Thiru. V. Umapathy, MFA (Sculpture), Fine Arts Teacher, Govt. Girls Higher Secondary School, Kadirgamam, Puducherry assessed the students' work in the competition. The topic assigned for the Art & Craft Competition is ***"Craft from Nature".***

Fig.59 Art & Craft Competition

Conduct of Technical Lecture and Live Demonstration during the Occurrence of Zero Shadow Day – 2024 on 22.08.2024 at Dr. AKSC&P

Puducherry Council for Science and Technology organised the Technical Lecture and Live Demonstration programme on the occurrence of **Zero Shadow Day** on 22.08.2024 at Dr. Abdul Kalam Science Centre and Planetarium, Puducherry. 105 Students from Maruthi Senior Secondary School, Lawspet, Puducherry, participated and benefited from the Programme.

Zero Shadow Day is a fascinating phenomenon that occurs when the sun rays fall vertically, creating a unique optical effect where objects seem to blend seamlessly with their surroundings.

Fig.60 Observance of Birth Anniversary of Dr. APJ Abdul Kalam

Commissioner-cum-Secretary (S, T&E)/ Chairman (EC, PCS&T) welcomed Hon'ble Lieutenant Governor and Hon'ble Chief Minister, Puducherry, with a Flower Bouquet and Shawl.

Fig.61 Receiving the Hon'ble Chief Minister by the Director at AKSC&P

Hon'ble Lieutenant Governor, Hon'ble Chief Minister, Puducherry, Commissioner-cum-Secretary (S, T&E)/ Chairman (EC, PCS&T) and Director (DSTE)/ Member Secretary (PCS&T) honouring and garlanding the Dr. Abdul Kalam Statue with Other Dignitaries, public and students.

Fig.62 Honoring and garlanding the Dr. Abdul Kalam Statue

Innovative Idea Contest - 31.05.2024

The Innovative Idea Contest was conducted on the occasion of World Environment Day – 2024 (05.06.2024) was conducted at Dr. Abdul Kalam Science Centre & Planetarium. An amount of Rs. 32,000/- was sanctioned for the conduct of the programme. The theme is Sustainable Solutions or "Our Land, Our Future". .60 Innovative Ideas were presented during the contest by students from school and college levels. One hundred students participated in the said contest. Participant certificates and cash awards was disbursed to the prize winners.

Fig.63 Innovative Idea Contest

INDUSTRIAL VISIT

PCS&T Organized one day industrial visit on 16.11.2024.for the Innovation Hub Members of 36 Students (11 Girls and 25 Boys) to M/s. Whirlpool India Ltd. & M/s. Motherson Automotive Technologies & Engg, Private Limited Puducherry. The Students learned about the technology and their operation of industry, which was highly beneficial to the IH Members.

Fig.64 Industrial visit

Design Rights Registered – IPR India

8 Projects for Design Rights and 1 Patent Rights are registered with IPR India. Out this two Design Rights has been approved and certificates has been obtained. The projects were developed by the Innovation Hub Members of 2024-2025 batch.

Table 36. Details of Design Rights

SI. No.	Projects Name	Member Name	Projects Application Number in IPR India (Design Rights)
Design Rights			
1.	Terracotta Air Cooler	Muhammad Tajdeen	428126-001
2.	Smart Snake Repellent Stick	Kanyamuthan, Paerarivan, Srivarshan, Shwetha.	428127-001
3.	An Unconsciousness Detecting Shoe Sole.	Sri Subanesh Mugunthan	428133-001
4.	Thermal Reduction Cushion	Sanjeev	428128-001
5.	Motor Driver for Arduino Nano	Dhinesh	430556-001
6.	Buccal Retractor	Kaveeya	439843-001
7.	Microorganisms Detecting Drone	Sarrvaeshvar Santhoshiga	439842-001
8.	Tools Organiser	Sheepa Anjana	450519-001
Patent Rights			
9.	Extraction of Sugar from pineapple	Rahmath Nisha	202541044145

CHAPTER - 19
PUDUCHERRY EIACP HUB

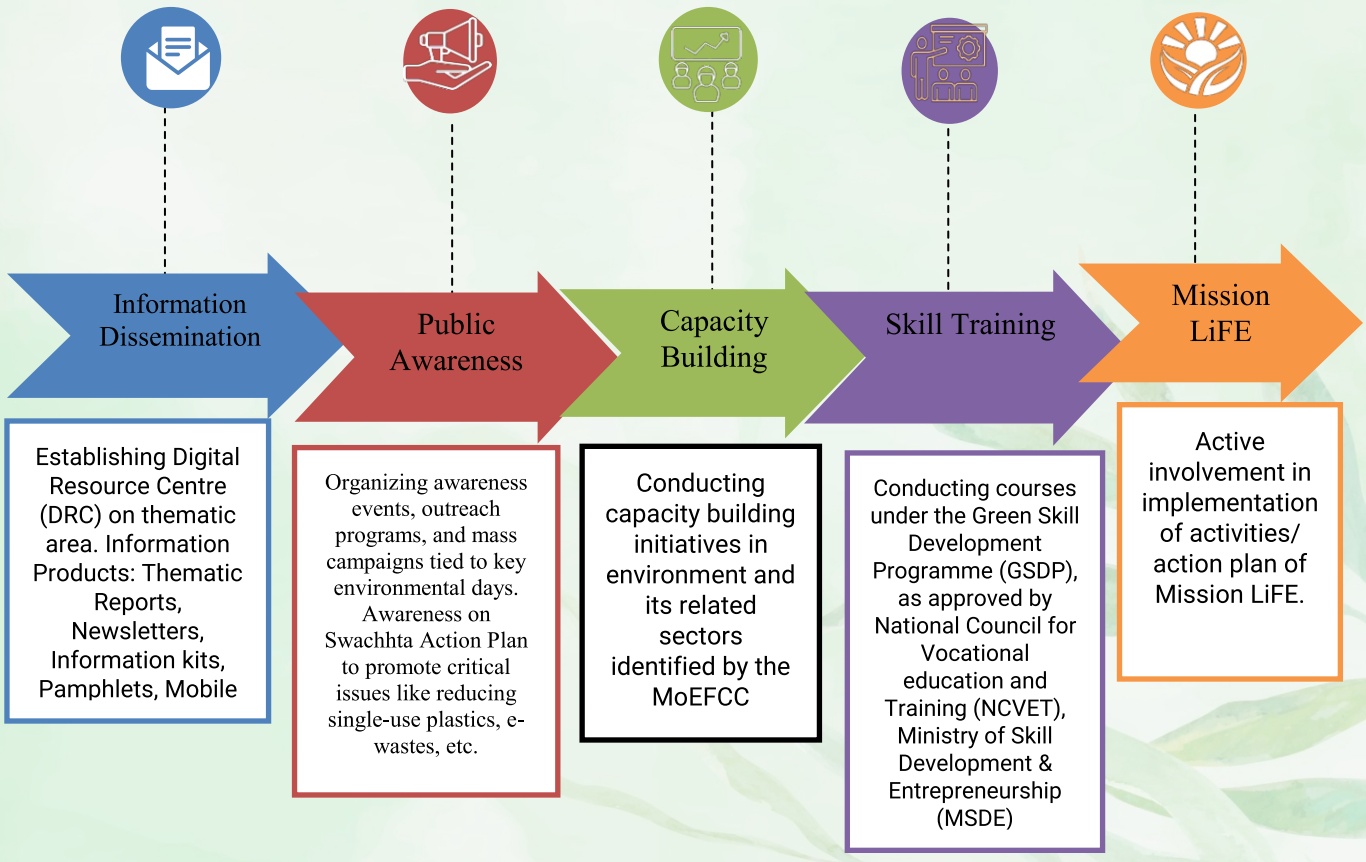
About EIACP

The Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP) - launched initially as the Environmental Information System (ENVIS) in 1983 and re-named in 2017- serves as MoEFCC's flagship Central Sector sub-scheme for environmental data dissemination, public awareness, capacity building and green livelihood. Through a network of 60 national centres, multiple Resource Partners, and State-level Hubs, EIACP underpins initiatives like Mission LiFE and the Swachhata Action Plan, organising thousands of events annually.

About Puducherry EIACP PC Hub

The Puducherry Hub hosted at the Puducherry Pollution Control Committee since September 22, 2005 focuses on **"Status of Environment and Related Issues"** concerning the U.T. of Puducherry. Activities of our centre include collection, analysis, storage, retrieval and dissemination of information in the subject area allotted. The information is being disseminated through the quarterly newsletter and various environmental awareness program in schools and colleges for imparting Environmental comprehension among students.

Objectives of EIACP:



PUBLICATIONS

EIACP Hub has released Special Publications, News Letters, infographic kits and other knowledge products etc. for the FY 2024- 2025. The complete details of the publications and special publications can be viewed at: https://dste.py.gov.in/Envispdy/Newsletter.html

Table 37.Details of Publications

Newsletters	04
Mobile App	01
Posters	19
Pamphlets/Brochure	06

Newsletters:

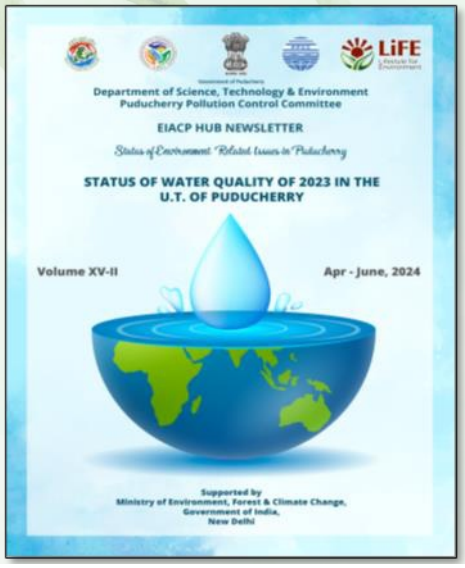


Fig: 65. Status of Water Quality

Fig: 66. Assessment of Urban Air Quality in Puducherry during Diwali Celebration 2020 - 23

Fig: 67. Green Budgeting

Fig:68. Solid Waste Management in the UT of Puducherry

GSDP and Capacity Building courses

The Green Skill Development Programme (GSDP) Certificate Courses on "Apiculture (Wild Bee) – NTFP" (08.01.2025 to 19.02.2025 – 30 days) and "Solar Enterprise Assistant Manager" (08.01.2025 to 26.03.2025 – 64 days) were successfully conducted at Dr. Abdul Kalam Science Centre and Planetarium, Lawspet, Puducherry. These programmes were organised by the Puducherry EIACP Hub under the aegis of the Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India, New Delhi. A total of 50 youth participants completed the courses.

Fig.69 Photo clips of GSDP Courses

Table 38. Awareness and outreach Activities

Activity Type	Number of Events	Total Outreach
Capacity Building Program	06	414
Environmental days celebrated	08	3026
Competitions (Elocution, Quiz, Drawing, Speech, Innovation, etc.)	08	1108
Webinars / Talks	03	325
Workshops	02	179
Seminars / Conferences	02	446
Street Play, Clean-up Drives, School Rallies, etc.	05	1262
Plantation Drive	19	11500
Mission LiFE Awareness	27	11344
Total	**80**	**29,604**

Fig.70 Hands-on Training on Waste to Wealth & Craft making competition

Fig.71 International Day for Biological Diversity Celebration

Fig.72 Tree Plantation Drive

Fig.73 Skill Training for SHGs

The Puducherry EIACP Hub has, in FY 2024–25, successfully integrated information services with capacity building and mass outreach culminating in 80 diverse events with 29,604 participants, four thematic newsletters, and two GSDP courses benefiting 50 youths.

A plastic-free Earth – A prosperous life!)

CHAPTER-20
PUDUCHERRY CLIMATE CHANGE CELL

The Puducherry Climate Change Cell (PCCC) was established in August 2016 in the Department of Science, Technology and Environment, Government of Puducherry, with the support of the Department of Science and Technology, Government of India, under the National Mission for Strategic Knowledge on Climate Change (NMSKCC). In 2023, the Cell was further strengthened under Phase-II of the project titled *"Strengthening the State Climate Change Cell under NMSKCC (SCCC-NMSKCC) in the U.T. of Puducherry"* with a sanctioned project cost of ₹2.46 crore for a duration of five years, spanning from 1st April 2023 to 31st March 2028 (FY 2023–24 to FY 2027–28).

PCCC serves as the nodal agency for climate change knowledge management in the Union Territory of Puducherry. It is responsible for the systematic collection, collation and dissemination of region-specific climate data that supports the formulation and implementation of evidence-based climate policies and strategic interventions. The Cell actively contributes to developing knowledge networks, promotes research in climate science and undertakes targeted initiatives to raise awareness and build capacity among stakeholders. These efforts are critical in enhancing the Union Territory's ability to assess, adapt and mitigate the risks and vulnerabilities associated with climate change.

State Action Plan on Climate Change

PCCC prepared and submitted the revised State Action Plan on Climate Change (SAPCC) to the Ministry of Environment, Forest and Climate Change (MoEFCC) on 07.11.2024 with the approval of the U.T. Government. The revised SAPCC 2.0 was reviewed and approved by the 17th Expert Committee on Climate Change, Ministry of Environment, Forest and Climate Change (MoEFCC), Govt. of India on 06.03.2025. The final approval of MoEFCC is awaited.

Puducherry Green Budget 2024-25

PCCC is conducting the Green Budget Assessment of the Annual Budget of the U.T. of Puducherry since 2023-24. The Green Budget Assessment for the Financial Year 2024-25 is being carried out in collaboration with The Energy and Resources Institute (TERI), New Delhi. The results of the assessment will be published in the first quarter of 2025-26.

Climate Change Risk Assessment Tool

PCCC in collaboration with the Centre for Study of Science, Technology and Policy (CSTEP), Bengaluru has developed a web-based Climate Change Risk Assessment Tool (CRAT). CRAT is the first tool of its kind in India, offering capabilities for multi-hazard and multi-sectoral climate risk analysis to support evidence-based decision-making. The tool was officially launched on **21st April 2025** along with the release of the report titled *'Climate Risk Assessment Tool (CRAT) for Puducherry'*.

Fig.74 Launch of Climate Change Risk Assessment Tool and release of report titled 'Climate Risk Assessment Tool (CRAT) for Puducherry'

Assessing Past, Present and Future Change of Puducherry and Karaikal District Coastline and Effect of Climate Change:

PCCC, in collaboration with NIT-Puducherry, initiated a research study on coastal changes and climate impacts in Puducherry and Karaikal in September 2024. During the current year, transect-based shoreline changes monitoring was continued. Key activities included the collection and analysis of field data using GNSS and drones, sediment analysis to understand transport patterns, and the development of a deep learning-based coastal erosion prediction model. A high-performance workstation was procured for data analysis and AI algorithms for coastal erosion forecasting.

Fig: 75. Photograph of data collection using GNSS in Puducherry and Karaikal region

Low Carbon Strategies and Long-Term Net Zero Initiatives:

PCCC is collaborating with M/s.Auroville Consulting on the following activities/initiatives:

i. GHG Inventory Development
ii. Low-Carbon Strategy Development
iii. Carbon Credit Integration
iv. Roadmap for developing Model Net-Zero Village Establishment

An MoU prepared has been signed with M/s. Auroville Consulting, Auroville with the approval of Government of Puducherry for developing long term strategies for low carbon development pathway.

Preparing the Coastal Resilience Plans (CRPs) for the U.T. of Puducherry under the Urban Shift Country Project

PCCC is coordinating the development of coastal resilience plans under the UNEP-led Urban Shift project, focusing on climate adaptation through spatial planning, nature-based solutions, and low-emission mobility. As part of this initiative, a two-day Urban Shift Geospatial Analysis Workshop was organized on 29th and 30th April 2025 at Hotel Accord, Puducherry, in collaboration with the Town and Country Planning Department (TCPD), the Department of Revenue and Disaster Management (DRDM), the World Resources Institute (WRI), and ICLEI South Asia. The workshop witnessed active participation from government officials and subject matter experts, who explored the use of geospatial data in co-creating inclusive and resilient solutions for the urban areas of Puducherry.

Fig.76 Shri. Ashish Madhaorao More, I.A.S., Secretary (S&T), addressing two-day Urban Shift Geospatial Analysis Workshop conducted for line departments

Knowledge Management: Climate Change Knowledge Portal

PCCC has developed a knowledge portal on climate change with specific reference to the Puducherry UT. Various types of data sets like Statistical details, Weather data, Vulnerability profile, GHG Inventory, SAPCC, Projects and Programs undertaken, current news, and climate change policies are available on this website: https://dste.py.gov.in/PCCC/. The website is updated regularly and was completely revamped during the current year to enhance user experience, data accessibility and functionality.

Fig.77 Screenshot of Climate Change Knowledge Portal of PCCC

Articles published

- An Overview of India's Fourth Biennial Update Report: Key Findings and Implications
- Nam Neer and Water-Rich Puducherry: A Journey Towards Sustainable Water Management
- Harnessing the Sun: Dr. Abdul Kalam Science Centre's Leap Towards Sustainability

Climate Change Awareness and Capacity Building Programs

Workshops / Conferences

PCCC in coordination with DSTE and PPCC organized conferences / workshops including the 'Our Land Our Future' conference, World Ozone Day – 2024 workshop and Implementation Marine Spatial Planning for Puducherry with participation of 470 stakeholders.

Training Programs

A training program on crafts from waste, teacher training on microplastic monitoring, and a village sensitization program for promoting Mission LiFE and Jal Shakti Abhiyan were conducted, with the participation of 427 Self Help Group participants.

Webinar Series on Climate Change

As part of the 'Webinar Series on Climate Change,' 8 Webinars have been conducted for Government Officials, Academicians, Professionals, Researchers, Students, and other Climate Enthusiasts, with 600 participants.

Technical Seminar

PCCC organized technical lectures for college students on key environmental themes, including World Environment Day 2024 at Pondicherry University (86 participants), a National Science Day seminar at SMVEC (200 participants), and a session on climate data analysis and ecology at Pondicherry University (42 participants), promoting climate education.

Climate Change Awareness Programs

PCCC has been conducting continuous Awareness Programs on 'Climate Change' in all the schools and colleges of Puducherry. 15 awareness programs were conducted, with 1549 students participating. In these programs, students were introduced to the basic facts of Climate Change. Climate Change Awareness pamphlets and posters on 'Mission LiFE—30 Days Challenge' were distributed.

Fig.78 Seminar on World Environment Day -2024 conducted for college students

A quiz competition was organised for school students to create awareness on the World Environment Day—2024 themes 'Our land. Our future' and 'Swchhta Hi Seva', with participation from 79 students and 55 students, respectively.

Fig.79 Quiz Competition conducted for school & college students

Public Outreach Programs

PCCC organised environmental awareness activities, including clean-up drives, street plays, and exhibition stalls at significant events. Engaging students, teachers, officials, NGOs, and the public, these initiatives reached over 11,000 participants and promoted climate action and sustainability across diverse stakeholder groups in Puducherry.

Fig.80 PCCC outreach programs

CHAPTER-21
IMPLEMENTATION OF RTI ACT

Table 39. Status of RTI Application for the year 2024-2025

Department	Received	Disposed	Balance
PPCC	69	69	Nil
DSTE	9	9	Nil
PCZMA	12	12	Nil
Total	90	90	Nil

CHAPTER-22

Table 40. Budget Details of PPCC 2024-2025

Sl. No	Source of Income	Fy 2024-2025	
		Income (in Rs.)	Expenditure (in Rs.)
	Balance in Hand (FY 2022-2023)	79,39,805	
1.	Consent Fee	94,61,933	
2.	Authorization Fee	6,57,000	
3.	Lab analysis charges	15,63,773	
4.	Bank interest earned	1,00,863	
5.	Environment Compensation Fund of CPCB	12,17,500	
6.	Salary (Regular Staff)		6772196
7.	Outsourcing Staff		3209326
8.	Hiring vehicle		1599242
9.	Kali Security		754118
10.	Rent		291806
11.	Electricity		128423
12.	Telephone charges		122437
13.	Analysis charges under NAMP & NWMP		1563773
14.	Celebration of World Environment Day		804821
15.	Miscellaneous		592819
	Total	2,09,40,874	1,58,38,961